# ENERGY SAVINGS OPPORTUNITY SURVEY FORT BELVOIR, ALEXANDRIA, VIRGINIA

A/E CONTRACT NO. DACA 31-89-C-0198

# FINAL SUBMITTAL VOLUME III

Calculations

19971017 181

Prepared for

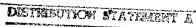
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# VOLUME III CALCULATIONS

Summer Steam Use Evaluation (300 Area)

**Building 307** 

**Building 309** 

**Building 317** 

**Building 327** 

**Building 331** 

**Building 334** 

**Building 357** 

**Building 362** 

**Building 363** 

**Building 365** 

300 AREA BUILDINGS

## 300 SERIES BUILDINGS

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#357	357-1
#362	362-1
#363	363-1
#365	365-1

#### **ECOs INVESTIGATED**

In the 300 area buildings, namely building numbers 307, 309, 317, 327, 331, 334, 357, 362, 363, and 365, summer steam requirements were evaluated. Four alternatives were considered and are as follows:

Alternative 1. Install a new boiler at central heating plant #332 to handle only the summer load allowing the large boiler to be shut down.

Alternative 2. Install a new boiler at each building for summer load allowing central heating plant #332 to be shut down.

Alternative 3. Install a new steam and condensate main, sized for summer load, from the central heating plant #1422 to the 300 area distribution system allowing the central plant #332 to be shut down.

Alternative 4. Install a new steam and condensate main, sized for year-round load, from the central heating plant #1422 to the 300 area allowing the central plant #332 to be permanently closed.

# ALTERNATIVE # 1

SUMMER BOILER AT CENTRAL HEATING PLANT " ETC.
TO SHUT DOWN LARGE BOILER FROM MID-APR, TO MID-OCT.

MAXIMUM ESTIMATED PEAK LOADS

DURING NON-HEATING MONTHS MID-APR. TO MID-OCT.

BLDG, NO.	BLDG. SIDE LOADS (FROM EZO SIMULATIONS)
#307	763 MEH
# 309	1395 MBH
# 317	831
# 327	<i>668</i>
* 331	1625
<b>*</b> 334	173
* 357	3273
* 362	241
<b>#</b> 363	3052
# 365	152

THIS LOAD ALONE IS 37 | BOHP W/O ADDITIONAL LOAD FROM DISTRIBUTION SYSTEM LOSSES OF THE NEW

12,393 MBH / 33.4 MEH/Bohp = 371 Bohp

BOILERS EFFICIENCY.

THE SIZE OF A NON-HEATING SEASON BOILER WILL BE WITHIN 20% OF THE EXISTING SMALLER 332 PLANT BOILER THEREFORE THE SAVINGS REALIZED WITH THIS ALTERNATIVE WILL NOT JUSTIFY THE EXPENSE OF IMPLEMENTATION.

THERE IS NO ADVANTAGE CONTINUING WITH THIS ECO

CLIENT:	EAC / ENGINEERING APPLICATION: CONSULTANTS				
PROJECT: ENERGY SAVINGS	MADE	CHK.	REV	J.TOB	
offortunity survey	REF	VP		SHT M_	
SUBJECT: CENTRAL SUMMER BOILER					

#### 300 SERIES BUILDINGS

## Local Boilers and Water Heaters in 300 Area

Description - Buildings 307, 309, 317, 327, 331, 334, 357, 362, 363, and 365 in the Belvoir Research, Development, and Engineering Center require steam during the summer for air-conditioning re-heat, and domestic hot water generation. This evaluation addresses the feasibility of installing a local boiler in eight buildings and domestic hot water heaters in the remaining two buildings, thus obviating the need to keep a central heating plant in Building 332 running during non-heating months.

Energy Saved = 30,459 MBTU/year

Cost = \$575,562 (incl. SIOH)

SIR = 11.6

# LIFE CYCLE COST ANALYSIS SUMMARY ENERGY CONSERVATION INVESTMENT PROGRAM (ECIP)

Cz	ATION: FORT BELVOIR	REGION NO. 3	PROJECT NUMBERDACA-	31 <u>-89-C-0198</u>
PRO	JECT TITLE: FNERGY SAVINGS	S OPPORTUNITY SURVEY	FISCAL YR	
DIS	CRETE PORTION NAME #300	AREA - LOCAL BOILE	SRS VS. #332	
	LYSIS DATE August '91			EAC
1.	INVESTMENT  A. CONSTRUCTION COST  B. SIOH  C. DESIGN COST  D. SALVAGE VALUE  E. TOTAL INVESTMENT (1)	- A + 1B + 1C - 1D)	\$ 545,562 \$ 30,000 \$ 32,750	\$ <u>608,3/2</u>
2.	ENERGY SAVINGS (+) / CO ANALYSIS DATE ANNUAL SA	ST (-) VINGS, UNIT COST AND DISC	COUNTED SAVINGS	
	COST FUEL \$/MBTU/YR(1)	SAVINGS ANNUAL \$ MBTU/YR(2) SAVINGS (3)		COUNTED INGS (5)
B.	ELEC \$ 18.05 DIST \$ 7.43 RESID \$ 6.62 NG \$ 5.33 COAL \$	566 -19702 49595 \$ 10216 \$ -146386 \$ 328318 \$	21.66 \$-3	159 472 3170 721 703,710
	TOTAL	30,459 \$ 192	148	\$ 5,692,461
	NONENERGY SAVINGS (+) / C	COST (-)		<b>.46</b> .
	A. ANNUAL RECURRING (+ (1) DISCOUNT FAC (2) DISCOUNTED S	-/-) TTOR (TABLE A) AVING/COST (3A X 3A1)	\$ 96,130 \$ 1,396	769
	B. NONRECURRING SAVING	S (+) / COST (-)		
			DISCOUNTED SAV- INGS(+) COST(-)(4)	
	(1) \$ (2) \$ (3) \$		\$ \$ \$	
	(4) TOTAL \$		\$	_
	D. PROJECT NONENERGY Q (1) 25% MAX NONE a. IF 3D1 b. IF 3D1 c. IF 3D1	COUNTED SAVINGS(+)/COST(- PUALIFICATION TEST ENERGY CALC (2F5 x .33) IS = OR > 3C GO TO ITEM 4 IS < 3C CALC SIR = (2F5+ IS = > 1 GO TO ITEM 4 IS < 1 PROJECT DOES NOT Q	\$ 1,878,512 3D1) - 1E =	<u>\$ 1,396,769</u>
4.	FIRST YEAR DOLLAR SAVINGS	2F3 + 3A + (3B1d ÷ YEARS	ECONOMIC LIFE)	<u>\$ 288,278</u>
5.	TOTAL NET DISCOUNTED SAVI		•	\$ 7,089 230
	DISCOUNTED SAVINGS RATION	(IF < 1 PROJECT DOES NOT	QUALIFY) (SIR) = (5-	1E) = 11.6
	SIMPLE PAYBACK PER	HOD (YEARS)		= 2.1

# CAL BOILERS VERSUS #332

## NON-ENERGY ANNUAL SAVINGS(+)/COST(-)

#332 OP & MAINT.	106090
WATER MAKEUP & TREAT	5240
STARTUP \$\$ ADJUST	-3120
MONITOR SYSTEMS / WK	-6080
COLD START-UP REPAIR	-6000
TOTAL	96130

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM USE EVALUATION

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

300 AREA CENTRAL STEAM SYSTEM OPERATING COSTS

CENTRAL HEATING PLANT BUILDING 332

IYEAR

MID-AFTIL MID-OCTOEER

OPERATION and MAINTENANCE

Current O & M Contract = \$211,020./Yr \$211,020. \$ 17,585./Mo

Mid-April thru Mid-October =

\$106,090.

Job Orders

Based on 7 months in 1990 = \$15,720./Yr \$ 15,720.

(\$7,860.) N/A Mid-April thru Mid-October =

MAKE-UP WATER & TREATMENT =

\$ 12,028. \$ 5,240.

FUEL COST

 $N_{\text{D}}$ . 6 Oil, 901,940 GALS x .99 = \$892,921. \$892,921.

Mid-April thru Mid-October (Actual)

 $351,180 \text{ GALS } \times .99 =$ 

\$347,668.

ELECTRIC COSTS =

\$ 23,740. \$ 11,870.

BRDEC STEAM DISTRIBUTION SYSTEM MAINTENANCE

Based on Ft. Belvoir user charge of

\$ 9.97 / 1000 lbs of steam

- fuel and plant costs =

\$ 1.59 / 1000 lbs x 95,907 k lbs = \$152,492.\$152,492.

Mid-April thru Mid-October =

(\$ 76,664.)

SUB-TOTALS \$ 1,307,921. \$470,868.

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM ALTERNATIVES

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

# CENTRAL HEATING PLANT BUILDING 332 STEAM PRODUCTION (Actual - Based on Facilities Engineering Log) (October 1989 thru September 1990)

Year	Month	Steam 1000 lbs	Low	24 Hours Avg	High	Gallons No. 6	
1989	Oct	6,503	 149	209.8	283	62.150	27,260
1909	Nov	8,046	195	268.2	351	70,840	ŕ
	Dec	11,336	274	365.7	460	122,440	
1990	Jan	9,427	247	304.1	367	103,570	
1950	Feb	8,810	136	314.6	503	87,617	
	Mar	10,220	249	329.7	426	89,563	
	Apr	8,694	233	280.5	374	<b>76,8</b> 90	35,050
	May	7,523	203	242.7	305	68,550	,
	Jun	6,249	134	208.3	362	58,470	
	Jul	6,898	182	222.5	254	52,600	
	Aug	5.849	104	188.7	234	55,760	
	Sep	6,352	152	204.9	244	53,490	

12 Month Total = 95,907,000 lbs 901,940 gals x \$ .99 = \$892,920.

Winter Total = 56,473,000 lbs 550,760 gals x \$ .99 = \$545,252.

Summer Total = 39,434,000 lbs 351,180 gals x \$ .99 = \$347,668.

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM USE EVALUATION

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

CENTRAL HEATING PLANT BUILDING 332 MAKE-UP WATER USAGE ( Actual - Based on Facilities Engineering Log ) ( October 1989 thru September 1990 )

Year	Month	Feedwater 1000 lb	Gallons	Make-up Gallons	%
1989 1990	Oct Nov Dec Jan Feb Mar	6,535 8,077 11,367 9,462 8,838 10,251	784,513 969,627 1,364,585 1,135,894 1,060,984 1,230,612	297,260 359,029 642,971 669,670 445,111 498,100	37.9 37.02 47.1 58.95 41.95
	Apr May Jun Jul Aug Sep	8,724 7,554 6,287 6,329 5,880 6,382	1,047,298 906,842 754,741 759,783 705,882 766,146	475,404 472,611 382,270 406,260 354,130 319,721	45.39 52.1 50.6 53.4 50.1 45.29
	11	95,686 lbs	5	5,322,537 gal	ls 46.3%

WATER COST

Mid-April thru Mid-October = 2,318,116 gals

2,318,116 gals x \$ 1.28 / 1000 gals = \$ 2,967.

WATER TREATMENT

2,318,116 GALS X \$ .98 / 1000 gals = \$ 2,273.

\$ 5,240.

BLDG, # 332 HEATING PLANT AND CENTRAL STEAM DISTRIBUTION SYSTEM MAINTENANCE ESTIMATE,

BASED ON FT. BELVOIR CHARGE OF #9,97/1000 165 STM. TO USERS.

# FUEL COST

901,940 GAL. #6 EXPENDED to PRODUCE 95,907,000 lbs of stm = 106.33 lbs/GAL

:. 1000 lbs sTM = 9.4 GALS \*6 @ .64 = \$46.02 / 1000 lbs 9.97 / 1000 lbs

-6.02 #6 cost

3.95 LEFT FOR PLANT & DIST. SYSTEM MAINTENANCE

# # 332 HEATING PLANT OPERATION & MAINTENANCE / YR

\$211,020. CONTRACT + 15,720. = 226,740/95,907 KIBS \$2.36/1000165

-2.36/1000165

\$ 1.59 / 1000 lbs FOR DISTRIBUTION SYSTEM MAINTENANCE

# BRADL STEAM DISTRIBUTION SYSTEM MAINTENANCE!

# 1.59/1000 lbs x 95,907 Klbs = 152,492/YR = 12,708/Mo.

CENTRAL HEATING PLANT #332

PLAUT EFFICIENCY

OVERALL - 12 MONTHS OCT 1989  $\rightarrow$  SEPT 1990 95,907 K 165 STM. PRODUCED w/901,940 GALS # 6 OIL  $\frac{95,907,000}{901,940} = \frac{106.33 \text{ lbs}}{\text{GAL}}$ 

106,330 BTU = 71.02 % EFF.

CLIENT:		GINEERING	APPLICATIONS	
#332 SUMMER STEAM ALTERNATIVES	LAU/	CONSULTANTS		
PROJECT: ENERGY SAVINGS	MADE CHK.	REV	JOB	
OPPORTUNITY SURVEY	REF VP		SUT	
SUBJECT: #332 PLANT EFFICIENCY			SHT M-	

BOILER # 1 (1965) ELECTRICAL CONSUMPTION 20000 KS/HR @ 130 PSI (DESIGN) HIGH TEMP. INDUCED DRAFT FLIJ (89) 16,900 CFM @ 600°F 10 HF 8.54 KW 7/2 KF FORCED DRAFT FALL (89 8000 4 M 6.48 30 MF (90) FEED WATER PUMP 20.52 飞吊 (88) EOOSTER PUMP 6.48 马机 54) 500 GPH OIL PUMP SET 2.71 73 6 CHEMIKAL FEED PUMP (84) ,22 3 KP

(54) 26200 CFM

2.71

PROPELLER HAN

# ELECTRICAL CONFUNCTION

8.54 x	4044	=	34,535	×	.0616/kwh	t	2127	<u>нети</u> 117,83	
6.48 ×	4044	•	26,205	×		=	1614	14.98	
20.52 x	4044	•	82982	×		<del>-</del>	5111	293,15	<b>,</b>
6.48 ×	4044	=	26 205	×		=	1614	89,41	
2,71 ×	4044	=	10,959	×		=	675	37.39	ì
,27 x	4044	£	829	×		•	54	2.99	
2.71 ×	4044	=	10 959	×		النبيت	475	37.3	
						74	11,870	657.	6

INDIVIDUAL BOILERS

INITIAL INVESTMENT COST:

# 545,562. (SEE BLOG CALCULATIONS FOR INDIVIDUAL COSTS)

BOILER MAINTENANCE: (10 BLDGS)

YEALT CHECK OUT, CLEAN UP, START-UP & ADJUSTMENT = \$3120, WEEKLY MONITORING OF SYSTEMS

EXISTING DISTRIBUTION SYSTEM START-UP REPAIR/MAINT, \$6000.

FUEL COSTS (#2 OIL) (10 BLOGS)
142,048 GALS × 1.03 =

#146,310.

ELECTRIC COST

# 1,660.

#163,170

LOCAL BOILER OR HOT WATER HEATER

<b>*</b> 307	#48,910
# 309	85, 175
# 317	53, 075
# 327	58,891
# 331	50,670
# 334	5,700
# 357	110,625
# 36Z	41,930
# 363	82,466
# 365	8,120
:	
	\$ 545,562

(INDIVIDUAL ESTIMATES FOLLOWING CALCULATIONS FOR EACH BUILDING, HEREINAFTER.)

# LOCAL BOILER MAINTENANCE

- YEARLY CHECK OUT, CLEAN UP, START-UP & ADJUSTMENT,
INCLUDES OIL SYSTEM & CONDENSATE EQUIPMENT,
FILTER CHANGING, VALVE CHANGE OVER, ETC.

$$-12 \text{ MH } \times 19.97 = 240. L$$
  $20. \text{ M} = 260$ 

$$50 \qquad 1 \qquad 51$$

$$310 \times 1.1 = 341 \times 1.1 = $375.$$

8 BLDGS x 375, = 3000

 $-2MH \times 19.97 = 40 \times 1.21 \times 1.11 \times 1.11 = 58.50$  $2BLDGS \times 58.50 = 117.$ 

TOTAL 10 BLDGS. = # 3120.

- PERIODIC SYSTEMS MODITORING

1 MH / WEEK

19.97 x 26 WEEKS = 520. x1.21 x1.1 x 1.1 = 760.

8 BLDGK × 760 = \$6080.

LOCAL BOILER (ASSOCIATED MAINTENANCE COST)

-REPAIR AND MAINTENANCE OF EXISTING DISTRIBUTION SYSTEM BECAUSE OF 26 WEEKS OF NON-USE AND A COLD START-UP.

L5 = \$6,000.

-	REPACK	15	VALV	ES		25	;	
	REPLACE	20	LF O	F 6"	PIPING	15.3	5 13.54	
_	REPLACE	20	LF OF	2"	PIPING	5.5	5 2,9:	
-	REPLACE	(2	) 90	" ELLS	- 611	110,	<i>3</i> 7,	
_	REPLACE	(2)	90	" EUS	-2"	19.79	10.30	
	REPLACE	15	GAS	sket s	et6	150	25.	
						3366	799	4165
						707	36	743
								4908 +04F # 5940.
							<b>6</b> 04	#6000.

LOCAL BOILERS

ELECTRICAL CONSUMPTION

WORST CASE

BURNER 1/2 HP x .746 / .84 = 1.33 x 2022 = 2694 KATH

2694 x .0616 = 166. = 9.2 HETU

x 10 BLD65

= 92 METU

=#1660.

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM ALTERNATIVES

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

#### E20 COMPUTER ESTIMATED FUEL EXPENDED FOR SUMMER OPERATION FROM MID-APRIL THRU MID-OCTOBER FOR AIR CONDITIONING REHEAT, DOMESTIC HOT WATER & PROCESS

# GALLONS #2 FUEL OIL

BLDG	APR	MAY	JUN	JULY	AUG	SEPT	OCT	TOTAL
#307	1260	1640	1036	931	1007	1394	1182	8456
#309	3016	5319	4399	4221	4373	4990	2981	29299
#317	1603	2080	1188	898	999	1574	1499	9841
#327	1910	3210	2867	2874	2882	3075	1722	18540
#331	544	1088	1039	1039	1137	941	593	6381
#334	24	50	<b>4</b> 8	48	52	44	26	270
#357	5704	10709	9495	9307	9606	10199	5833	60853
#362	462	679	559	540	<b>5</b> 59	625	423	3847
#363	610	766	406	<b>32</b> 3	370	640	606	4237
#365	27	55	53	53	58	49	29	324

Total GALS = 142048

351,180 gals #6 x \$0.99 =\$347,668.20 52,571.68 MBTU

142,048 gals #2 x \$1.03 =\$146,309.44

19,702.05 MBTU

Savings in fuel =\$201,358.76

32,869.63 MBTU

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM USE EVALUATION

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

#### Additional 300 Area buildings that use summer steam

BLDG. #	LBS/H
314	45
315	45
316	70
318	115
324	115
325	70
326	20

480 lbs/HR x 24 = 11,520 lbs/DAY

x 183.5 days = 2,114,400 lbs/summer

#### ENERGY EXPENDED FROM CENTRAL PLANT #332

w/ 332 @ 71 percent efficiency = 106.33 lbs/GAL #6 oil

2,114,400/106.33 = 19,886 gals #6 x 149,700 ETU/GAL

= -2976.8 MBTU by 332 for other 7 bldgs

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM USE EVALUATION

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

ESTIMATE OF DISTRIBUTION SYSTEM ENERGY LOSSES

Central Heating Plant #332

Mid-April through Mid-October

Total steam produced = 39,434,000 lbs stm

Total #6 fuel oil expended = 351,180 gals

39,434,000 lbs stm (actual steam produced as per log ) -20,030,000 lbs stm (E20 estimated energy use for 10 bldgs)

19,404,000 lbs stm

- 2,114,400 lbs stm (estimated energy for other 7 bldgs)

17,289,600 lbs stm (distribution system losses =

43.8 percent of total production>

#### MAKEUP WATER RATE

The actual average rate from April '89 thru Sept '90 = 46.3 percent of feedwater which seems to enforce a poor distribution system theory.

BASELINE ENERGY 300 AREA BLDGS HOLL MID-APRIL THRU MID-OCTOFER 307, 309, 317, 327, 331, 334, 357, 362, 363 \$ 365 (314, 315, 316, 316, 324, 325, 326)

39,434,000 lbs w/ 351,180 GALS # 6 x 149,700 BTU/GAL =

52,571.6 HBTU

#6 OIL SAULUG BY 332 PLANT SHUT DOWN MID-APR - MID GCT.

FOR 10 BLDGS IN SCOPE = 52,571.6 TOT

- 2,976.8 OTHER TELLS:

CORRECTED BASELINE ENERGY = 49,594.8 MBTU

#### 300 SERIES BUILDINGS

Shutdown #322 Plant in Non-heating Months & Supply Steam From #1422

Description - Buildings 307, 309, 317, 327, 331, 334, 357, 362, 363, and 365 in the Belvoir Research, Development, and Engineering Center require steam during the summer for air-conditioning re-heat, and domestic hot water generation.

This evaluation addresses the feasibility of connecting 300 area to #1422 boiler plant and shutting down #322 plant during non-heating months only.

Energy Saved = -937 MBTU/year

Cost = \$1,368,180 (incl. SIOH)

SIR = 0.69

## LIFE CYCLE COST ANALYSIS SUMMARY ENERGY CONSERVATION INVESTMENT PROGRAM (ECIP)

<b>O</b> c.	ATION	FOI	RT BELV	OIR		_ REGION 1	NO	3	PROJ	ect nui	mberDA	CA-31	-89-C-0198
PRO	JECT :	FITLE	ELENER	RGY S	AVINGS	OPPORTUNI	TY SURV	EY		1	FISCAL	YR	199
						AREA -				rs. c	NNEC	<b>7#3</b> :	32
						ECONOMIC							
1.	A. B. C. D.	SIC DES SAL TOI	ISTRUCT OH SIGN CO LVAGE V TAL INV	ST ALUE ESTM	ENT (12	\ + 1B + 10	c - 1D)			6 850 1, 330 7, 800	<u> </u>		<u>\$ 1,445,980</u>
2.	en:	ERGY ALYSI	SAVING S DATE	S (+	) / COS	T (-) INGS, UNI	COST	AND DI	SCOUNTED	SAVINO	SS		
	FUEL	\$	COS /MBTU/	_	ī	SAVINGS MBTU/YR(2)			_	DISCOUT FACTOR			UNTED GS (5)
A. B. C. D.	ELEC DIST RESI NG COAL	\$	18 05 7.43 6.62 5.33	)		658 -15 95	\$	3 70 559	-	15.6 <u>1</u> 26.5		\$	5, 29/ 9, 9/9
	TOTAL	L		,		<u>- 937</u>		\$ <u>/3/</u>	11				<u>s - 94,628</u>
	NONE	NERGY	SAVIN	igs (	+) / cc	ST (-)						-44	
	A.	(	(1) DI	SCOU	ING (+/ NT FACT NTED SA	-) COR (TABLE VING/COST	A) (3A X :	3A1)	14.53		75,		
	В.	NON	IRECURR	ING	SAVINGS	(+) / cos	ST (-)						
	ITE	<u> 4</u>				YEAR OF OCCUR.(2)		OUNT OR(3)	DISCOU		-		
	(1 (2 (3	<b>—</b>	\$ \$						\$ \$ \$				
	(4)	TO	TAL \$_						:	\$			
		PRO	OJECT N (1) 25 a b	ONEN % MA . I . I	ERGY QU X NONEN F 3D1 I F 3D1 I F 3D1 I	COUNTED SAY VALIFICATION ERGY CALC IS = OR > 3 IS < 3C CAI IS = > 1 GO IS < 1 PROS	ON TEST (2F5 x 3C GO TO LC S1R O TO ITI	.33) D ITEM = (2F! EM 4	4 5+3D1) ÷	<u>-31,</u>	227		\$ 1,091,058
4.	FIRS:	r yea	R DOLL	AR S	AVINGS	2F3 + 3A +	+ (3B1d	÷ YEAI	RS ECONON	MIC LIE	E)		<u>\$ 76,401</u>
5.	TOTAL	L NEI	DISCO	UNTE	D SAVIN	GS (2F5+30	=)						\$ 996,430
						(IF < 1 PF	ROJECT I	DOES NO	OT QUALIE	FY) (S]	iR) =	(5-1E	) = <u>0.69.</u> 18.9

4 See attached sheet

\_DG 1422 CONNECT VERSUS #332

ANNUAL MAINTENANCE, REPAIR & CUSTODIAL COSTS

#332 OP & mAINT.

106090

COLD START-UP

-6000

REPAIR

#1422 ADDL. O&M -25000

TOTAL

75090

PROJECT: ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM USE EVALUATION

LOCATION: Fort Belvoir, Virginia

PREPARED BY: Engineering Applications Consultants, P.C.

\*\*\*\*\*\*\*\*\*\*\*

300 AREA CENTRAL STEAM SYSTEM OPERATING COSTS

CENTRAL HEATING PLANT BUILDING 332

OPERATION and MAINTENANCE	/YEAR	MID-APR- MID-OCT
Current O & M Contract = \$211,020/Yr \$ 17,585/Mo	\$211,020	
Mid-April thru Mid-October =	(\$25,000)	\$ 81,090
Job Orders  Based on 7 months in 1990 = \$15,720/Yr  Mid-April thru Mid-October =	\$ 15,720 (\$7,860)	N/A
MAKE-UP WATER & TREATMENT =	\$ 12,028	
<pre>FUEL COST   No. 6 Oil, 901,940 GALS X .99 = \$892,921   Mid-April thru Mid-October (Actual)      361,832 GALS X .99 =</pre>	\$892,921	\$358,214
ELECTRIC COSTS =	\$ 23,740	\$ 11,870
BRDEC STEAM DISTRIBUTION SYSTEM MAINTENANCE		
Based on Ft. Belvoir user charge of \$9.97/1000 lbs of steam - fuel and plant costs =		
\$1.59/1000 lbs X 95,907 k lbs = \$152,492 Mid-April thru Mid-October =	\$152,492 (\$76,664)	N/A
SUB-TOTALS	\$1,307,921	\$451,174

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM USE EVALUATION

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

CENTRAL HEATING PLANT BUILDING 332 MAKE-UP WATER USAGE ( Actual - Based on Facilities Engineering Log ) ( October 1989 thru September 1990 )

Year	Month	Feedwater 1000 lb	Gallons	Make-up Gallons	%
1989	Oct Nov Dec	6,535 8,077 11,367	784,513 969,627 1,364,585	297,260 359,029 642,971	37.9 37.02 47.1
1990	Jan Feb Mar Apr May Jun Jul Aug Sep	9,462 8,838 10,251 8,724 7,554 6,287 6,329 5,880 6,382	1,135,894 1,060,984 1,230,612 1,047,298 906,842 754,741 759,783 705,882 766,146	669,670 445,111 498,100 475,404 472,611 382,270 406,260 354,130 319,721	58.95 41.95 40.47 45.39 52.1 50.6 53.4 50.1 45.29
	11	95,686 lbs	3	5,322,537 gal	 s 46.3%

#### WATER COST

Mid-April thru Mid-October = 2,318,116 gals

2,318,116 gals x \$ 1.28 / 1000 gals = \$ 2,967.

#### WATER TREATMENT

2,318,116 GALS X \$ .98 / 1000 gals = \$ 2,273.

\$ 5,240.

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM ALTERNATIVES

LOCATION:

FT BELVOIR, VA.

PREPARED BY: Engineering Applications Consultants

\*

CENTRAL HEATING PLANT BUILDING 332 STEAM PRODUCTION ( Actual - Based on Facilities Engineering Log ) (October 1989 thru September 1990)

Year	Month	Steam 1000 lbs	Low	24 Hours Avg	High	Gallons No. 6	
1989	 Oct	6,503	 149	209.8	283	62,150	27,260
1909	Nov	8,046	195	268.2	<b>3</b> 51	70,840	
	Dec	11,336	274	365.7	460	122,440	
1990	Jan	9,427	247	304.1	367	103,570	
1990	Feb	8,810	136	314.6	503	87,617	
	Mar	10,220	249	329.7	426	89,563	
	Apr	8,694	233	280.5	374	76,890	35,050
	May	7,523	203	242.7	305	68,550	
	May Jun	6,249	134	208.3	362	58,470	
	Jul	6.898	182	222.5	254	52,600	
		5,849	104	188.7	234	55,760	
	Aug Sep	6,352	152	204.9	244	53,490	

12 Month Total = 95,907,000 lbs 901,940 gals x \$ .99 = \$892,920. 550,760 gals x s .99 = \$545,252.Winter Total = 56,473,000 lbs Summer Total = 39,434,000 lbs 351,180 gals x \$ .99 = \$347,668. BLDG, # 332 HEATING PLANT AND CENTRAL STEAM DISTRIBUTION SYSTEM MAINTENANCE ESTIMATE,

BASED ON FT. BELVOIR CHARGE OF # 9,97 / 1000 165 STM. TO USERS.

# FUEL COST

901,940 GAL. #6 EXPENDED to PRODUCE 95,907,000 lbs of stm = 106.33 lbs/GAL

:. 1000 lbs STM = 9.4 GALS #6 @ .64 = \$46.02 / 1000 lbs 9.97 / 1000 lbs

-6.02 #6 COST

3.95 LEFT FOR PLANT & DIST. SYSTEM MAINTENANCE

# # 332 HEATING PLANT OPERATION & MAINTENANCE / YR

\$211,020. CONTRACT + 15,720. = 226,740/95,907 KIBS \$2.36/1000165

-2.36/1000165

\$ 1.59 / 1000 lbs FOR DISTRIBUTION SYSTEM MAINTENANCE

# BRADL STEAM DISTRIBUTION SYSTEM MAINTENANCE!

\$ 1.59 / 1000 lbs x 95,907 Klbs = 152,492/YR = 12,708/Mo.

CENTRAL HEATING PLANT #332

PLAUT EFFICIENCY

OVERALL - 12 MONTHS OCT 1989 -> SEPT 1990

95,907 K 165 STM. PRODUCED w/901,940 GALS # 6 OIL

95,907,000 = 106.33 165/GAL

106,330 BTU
149,700 BTU/GAL #6 71.02 % EFF.

CLIENT:	EAG	1	APPLICATIONS	
#332 SUMMER STEAM ALTERNATIVES	LAU	CONSULTANTS		
PROJECT: EUERGY SAUINGS	MADE CH	K. REV	JOB	
OPPORTUNITY SURVEY	REF V	P	CIT	
SUBJECT: #332 PLANT EFFICIENCY	<b>'</b>		EHT M-	

3 HP

BOILER #1 (1965) ELECTRICAL CONSUMPTION 30000 KS / HR @ 130 PSI (DESIGN) HIGH TEMP. INDUCED DRAFT FAN (89) 16,700 CFM @ 600°F 10 HP 8.54 KW 沙北 FORCED DRAFT FALL (39 8000 4FM 6.48 30 HP (90) FEED WATER PUMP 20.52 7七冊 (88) ECOSTER PUMP 6,48 3 HP 84) 500 GPH OIL PUMP SET 2.71 4 HP CHEMIKAL FEED PUMP (34) ,22

(54) 26200 CFM

2.71

PROPELLER FAN

# ELECTRICAL CONSUMPTION

8.54 × 4044 =	34,535	× .0616/kwh	= 2127	MBTU 117,93
6.48 × 4044 =	26,205	×	= 1614	89.41
20.52 × 4044 =	82982	<b>x</b>	= 5111	283,15
6.48 × 4044 =	26 205	×	= 1614	89,41
2:71 × 4044 =	10,959	×	= 675	37,39
.22 × 4044	- 389	×	<del>-</del> 54	2.99
2.71 × 4044	= 10 959	×	= 475	37.39
			# 11,870	657.6

CONSTRUCTION COST	ESTI	MATE	=	DATE PREPARED APRIL	_ 1991	SHEET	GF
PROJECT						R ESTIMATE	-
ENERGY SAVINGS	DURVEY		CODE A (No design	•			
FT. BELVOIR VIE	SAINIA					DE D <i>(Praliminary d</i>   CODE C <i>(Final das</i>	
ARCHITECT ENGINEER ENGINEERING APPL			COUSUI	TINTS	_	HER (Specify)	
DRAWING NO.	10 41 10 1		ATOR		· 1	CHECKED BY	
	· · · · · · · · · · · · · · · · · · ·		RE		<u>,                                     </u>	VP NATERIAL	
SUMMARY	NO.	UNIT	PER	LABOR	PER	TOTAL	TOTAL
	UNITS	MEAS.	TINU	10125	דואט .	10120	
INTERCONNECT STEAM							
SUPPLY FROM # 1422 W/						- i- i-	
300 AREA DISTRIBUTION							
SYSTEM - SUMMER							, , , , , , , , , , , , , , , , , , , ,
PIPE/CONDUIT SYSTEM							
8" stu / 12 34" \$	7700	LF	12.60	97020,	24.17	190729.	287,749.
4" cond / 8%" \$	7700	LF	11.10	85470.	19.56	150612	236,082.
TRENCHING	1700	LF	4.81	37 037	3.36	25872	62,909.
BEDDING	7700	LF	1.93	14 861	1.41	10 857	25,718.
LOOPS	26	EA	913.	23 738	1473.	38,298	62,0 <del>3</del> 6.
ANCHORY 8"	27	EA	85,	2 2 9 5	315,	8,505	10,800.
<b>4</b> "	27	EA	74.	1998	225.	6,075	8,073.
TRAP ASSEMBLIES	8	EA	150	1200	165	1320	2,520.
MANHOLES	4	EA	4000	16 000	6000	24000	40.000.
MISC. CUTING, PATCHING,							
REMOVAL & REFLACEMENT	7700	LF	12.	92,400	18.	138,600	251,000.
SUE-TOTAL				372,019.		594,363.	966,857.
LABOR MARKUP 21%				78,124.			79,124.
TAXES 4.5%						26,769.	26,769.
SUB-TOTAL							1,071,780.
OVERHEAD 10%				·			107 178.
SUE-TOTAL .							1,178,958
PROFIT 10%							117,896.
SUB-TOTAL							1,296,854
TOTAL							1,296,850.
10/100							

FUEL CONSUMPTION

EXTRA # 6 OIL EXPENDED AT CENTRAL PLANT \* 1422 DURING NON-HELTING MONTHS

\*1422 15 3% MORE EFFICIENT (74%) THAN # 332

: 351,180 GLIS #6 BY #332 = 340,645 AT #1422

340,645 GALS FOR 300 AREA LOAD + 21,986 GALS FOR CONNECTION 362,631 GALS \*6 - 351,180 GALS \*6 (ACTUALLY USED) 11,451 GALS MORE FUEL EXPENDED

11,451 GALS / 6.68 = 1714.221557 MBTU ADDITIONAL ENERGY

SAVINGS IN OTHER 7 BLDGS = 799 GAIS # 6 = 119.6 MBTU ADDIONAL

TOTAL EXTRA FUEL EXPENDED = 10,652 GALS \*6
10,652 / 6.68 = 1,594.6 METU

CLIENT:				APPLICATIONS
#332 SUMMER STEAM ALTERNATIVES		iU/_	CONSUL	TANTS
PROJECT: ENERGY SAVINGS	MADE	CHK.	REV	JCB
OPPORTUNITY SURVEY	REF	۷P		SHT W-
EUBJECT: # 1422 → #332 SUMMER				MT MT

# (ASSOCIATED MAINTENANCE COST)

-REPAIR AND MAINTENANCE OF EXISTING DISTRIBUTION SYSTEM BECAUSE OF 26 WEEKS OF NON-USE AND A COLD START-UP.

L5 = \$6,000.

- REPACK	15 VALVES	25	
- REPLACE	20 LF OF 6" PIPING	15.35 13.54	
- REPLACE	20 LF OF 2" PIPING	5,55 2,59	
- REPLACE	(2) 90° ELLS - 6"	110, 37,	
- REPLACE	(2) 90° ELS - 2"	19.75 10.30	
- REPLACE	15 GASKET SETS	150, 25,	-
		3366 799	4165
		707 36	743
			4908 +01P = # 5940.

SAY# 6000.

PROJECT:

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM USE EVALUATION

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

## Additional 300 Area buildings that use summer steam

BLDG. #	LBS/HF
314	45
315	45
316	70
318	115
324	115
325	70
326	20

480 lbs/HR x 24 = 11,520 lbs/DAY

x 183.5 days = 2,114,400 lbs/summer

#### ENERGY EXPENDED FROM CENTRAL PLANT #332

w/ 332 @ 71 percent efficiency = 106.33 lbs/GAL #6 oil

2.114.400/106.33 = 19.886 gals #6 x 149,700 BTU/GAL

= -2976.8 MBTU by 332 for other 7 bldgs

#### ENERGY EXPENDED FROM CENTRAL PLANT #1422

w/ 1422 @ 74 percent efficiency = 110.78 lbs/GAL #6 oil

2,114,400/110.78 = 19,087 gals #6 x 149,700 BTU/GAL

= -2857.2 MBTU by 1422 for other 7 bldgs

PROJECT:

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM USE EVALUATION

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

\_\_\_\_\_\_

ESTIMATE OF DISTRIBUTION SYSTEM ENERGY LOSSES

Central Heating Plant #332

Mid-April through Mid-October

Total steam produced = 39,434,000 lbs stm

Total #6 fuel oil expended = 351,180 gals

39,434,000 lbs stm (actual steam produced as per log ) -20,030,000 lbs stm (E20 estimated energy use for 10 bldgs)

19,404,000 lbs stm

- 2,114,400 lbs stm (estimated energy for other 7 bldgs)

17,289,600 lbs stm (distribution system losses =

43.8 percent of total production)

#### MAKEUP WATER RATE

The actual average rate from April '89 thru Sept '90 = 46.3 percent of feedwater which seems to enforce a poor distribution system theory.

#### 300 SERIES BUILDINGS

## Connect 300 Area to Central Boiler Plant in #1422

Description - Buildings 307, 309, 317, 327, 331, 334, 357, 362, 363, and 365 in the Belvoir Research, Development, and Engineering Center require steam during the summer for air-conditioning re-heat, and domestic hot water generation.

This evaluation addresses the feasibility of connecting 300 area to central boiler plant in building 1422 and shutting down #322 boiler plant.

Energy Saved = -3625 MBTU/year

Cost = \$1,465,057 (incl. SIOH)

SIR = 1.2

### LIFE CYCLE COST ANALYSIS SUMMARY ENERGY CONSERVATION INVESTMENT PROGRAM (ECIP)

<b>O</b> c	ATION: FORT BELVOIR	REGION NO. 3	PROJECT NUMBERDACA-3	L-89-C-0198
PRO	JECT TITLE: FNFRGY SAVING	S OPPORTUNITY SURVEY	FISCAL YR.	199
DIS	CRETE PORTION NAME #30	O AREA - CONNECT #142	22 TO 300 AREA - YEAR	ROUND
ANA	LYSIS DATE August '91	_ ECONOMIC LIFE	YEARS PREPARED BY_	EAC
1.	INVESTMENT  A. CONSTRUCTION COST  B. SIOH  C. DESIGN COST  D. SALVAGE VALUE  E. TOTAL INVESTMENT (	- 1A + 1B + 1C - 1D)	\$ 1,388,680 \$ 76,377 \$ 83,321 \$	\$ 1, 548,378
2.	ENERGY SAVINGS (+) / C ANALYSIS DATE ANNUAL S	OST (-) AVINGS, UNIT COST AND DIS	COUNTED SAVINGS	
	COST FUEL \$/MBTU/YR(1)	SAVINGS ANNUAL \$ MBTU/YR(2) SAVINGS (3)	FACTOR (4) SAVI	OUNTED NGS (5)
A. B. C. D. E.	ELEC \$ 18.05 DIST \$ 7.43 RESID \$ 6.62 NG \$ 5.33 COAL \$	1052 \$ 18989 \$ -30962 \$ \$ -30962	\$	20,803
,	TOTAL	<u>-3625</u> \$ - 11	973	<u>\$</u> -524,385
	NONENERGY SAVINGS (+) / (  A. · ANNUAL RECURRING (-)  (1) DISCOUNT FA  (2) DISCOUNTED (-)  B. NONRECURRING SAVING	#332 CTOR (TABLE A) SAVING/COST (3A X 3A1)	oèm <u>\$ 161,020</u> 14.53 \$ 2,339,6	
	SAVINGS (+	YEAR OF DISCOUNT	DISCOUNTED SAV-	
	(1)	OCCUR.(2) FACTOR(3)	\$\$	
	D. PROJECT NONENERGY (  (1) 25% MAX NON  a. IF 3D1  b. IF 3D1  c. IF 3D1	SCOUNTED SAVINGS(+)/COST(- QUALIFICATION TEST ENERGY CALC (2F5 x .33) IS = OR > 3C GO TO ITEM ( IS < 3C CALC S1R = (2F5- IS = > 1 GO TO ITEM 4 IS < 1 PROJECT DOES NOT (	$\begin{array}{c} s - 173, 047 \\ 4 \\ + 3D1) \div 1E = -0.45 \end{array}$	\$ 2,339,621
4.	FIRST YEAR DOLLAR SAVING	S 2F3 + 3A + (3B1d - YEARS	S ECONOMIC LIFE)	\$ 149,047
5.	TOTAL NET DISCOUNTED SAV	INGS (2F5+3C)		\$ 1,815,236
• .	DISCOUNTED SAVINGS RATIO	(IF < 1 PROJECT DOES NOT	QUALIFY) (S1R) = (5-1F	
	SIMPLE PAYBACK P	ERIOD (YEARS)		= 10.4

CONSTRUCTION COST ESTIMATE				DATE PREPARED		SHEET	OF		
PROJECT ENERGY SAVINGS OPPORTUNITY SURVEY					BASIS FOR ESTIMATE				
LOCATION						CODE A (No design completed)			
FT. BELVOIR VIR	_	CODE C (Final de.	s(jn)						
ENGINEERING APPLICATIONS CONSULTANTS						HER (Specify)			
DRAWING NO.		ESTIP	IATOR .RE	F	•	CHECKED BY			
	THAUD	ITY		LABOR		MATERIAL	TOTAL		
SUMMARY	NO. Units	UNIT MEAS.	PER UNIT	TOTAL	PER	TOTAL	COST		
INTERCONNECT STEAM									
SUPPLY FROM #1422 W/									
300 AREA DISTRIBUTION									
SYSTEM - YEAR ROUND									
PIPE / CONDUIT SYSTEM									
10" STM / 14"\$	7700	LF	14.20	109,340	30.08	231,616	340,956		
6" COND / 1034"\$	7700	LF	11.80	90,860	22.61	174,097	264 957		
TRENCHING	7700	LF	4.81	37,037	3.36	25,872.	62,909.		
BEDDING	17100	LF	1.93	14,861	1.41	10,857.	25,718.		
LOOPS	- 26	EA	32.74	982	5746	1724.	2,706.		
ANCHORS 10"	27	EA	92.	2484	377	10,179.	12,663,		
ده"	27	EA	79.	2133	301	8,127	10,260.		
TRAP ASSEMBLIES	8	EA	150	1200	165	1320	2,520.		
MANHOLES	4	EA	4000	16 000	6000	24,000	40,000.		
MISC. CUTTING, PATCHING	<u> </u>								
REMOVAL & REPLACEMENT	1700	LF	14	107,800	21	161,700	269,500.		
MOTHBALL #332		LS		4,000		1,000	5,000.		
SUB-TOTAL				386,697		650,492.	1,037,189		
LABOR MARKUP 21%				81,206			81,206.		
TAXES 4.5%						29,272.	29,272.		
SUB-TOTAL							1,147,667.		
OVERHEAD 10%							114,768.		
SUE-TOTAL							1,262,435,		
PROFIT 10%							126,244.		
SUB-TOTAL							1,385,680.		
TOTAL							1,388,680,		

PROJECT: ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM USE EVALUATION

LOCATION: Fort Belvoir, Virginia

PREPARED BY: Engineering Applications Consultants, P.C.

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300 AREA CENTRAL STEAM SYSTEM OPERATING COSTS

CENTRAL HEATING PLANT BUILDING 332

FUEL COST

OPERATION and MAINTENANCE /YEAR

Current O & M Contract = \$211,020/Yr \$211,020
\$ 17,585/Mo

Job Orders

MAKE-UP WATER & TREATMENT = \$ 12,028

Based on 7 months in 1990 = \$15,720/Yr

No. 6 Oil, 901,940 GALS X .99 = \$892,921 \$892,921 ELECTRIC COSTS = \$23,740

BRDEC STEAM DISTRIBUTION SYSTEM MAINTENANCE

Based on Ft. Belvoir user charge of \$9.97/1000 lbs of steam - fuel and plant costs = \$1.59/1000 lbs X 95,907 k lbs = \$152,492

SUB-TOTALS \$1,307,921 ·

\$ 15,720

\$152,492

PROJECT:

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM ALTERNATIVES

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

CENTRAL HEATING PLANT BUILDING 332 STEAM PRODUCTION (Actual - Based on Facilities Engineering Log) (October 1989 thru September 1990)

Gallons No. 6	High	24 Hours Avg	Low	Steam 1000 lbs	Month	Year
62.150	283	209.8	149	6.503		1989
•				•		<b></b>
•				•		
•		304.1		•		1990
•				•		1000
89,563	426	329.7	249	•		
76,890	374	280.5	233	*		
<b>6</b> 8, <b>5</b> 50	305		203	•	-	
58,470	362		134	•	•	
52,600	254	222.5	182	•		
<b>5</b> 5,760		188.7		•		
53,490	244	204.9	152	6,352	Sep	
	No. 6  62,150 70,840 122,440 103,570 87,617 89,563 76,890 68,550 58,470 52,600 55,760	High No. 6  283 62,150 351 70,840 460 122,440 367 103,570 503 87,617 426 89,563 374 76,890 305 68,550 362 58,470 254 52,600 234 55,760	Avg High No. 6  209.8 283 62,150 268.2 351 70,840 365.7 460 122,440 304.1 367 103,570 314.6 503 87,617 329.7 426 89,563 280.5 374 76,890 242.7 305 68,550 208.3 362 58,470 222.5 254 52,600 188.7 234 55,760	Low         Avg         High         No. 6           149         209.8         283         62,150           195         268.2         351         70,840           274         365.7         460         122,440           247         304.1         367         103,570           136         314.6         503         87,617           249         329.7         426         89,563           233         280.5         374         76,890           203         242.7         305         68,550           134         208.3         362         58,470           182         222.5         254         52,600           104         188.7         234         55,760	1000 lbs         Low         Avg         High         No. 6           6,503         149         209.8         283         62,150           8,046         195         268.2         351         70,840           11,336         274         365.7         460         122,440           9,427         247         304.1         367         103,570           8,810         136         314.6         503         87,617           10,220         249         329.7         426         89,563           8,694         233         280.5         374         76,890           7,523         203         242.7         305         68,550           6,249         134         208.3         362         58,470           6,898         182         222.5         254         52,600           5,849         104         188.7         234         55,760	1000 lbs         Low         Avg         High         No. 6           Oct         6,503         149         209.8         283         62,150           Nov         8,046         195         268.2         351         70,840           Dec         11,336         274         365.7         460         122,440           Jan         9,427         247         304.1         367         103,570           Feb         8,810         136         314.6         503         87,617           Mar         10,220         249         329.7         426         89,563           Apr         8,694         233         280.5         374         76,890           May         7,523         203         242.7         305         68,550           Jun         6,249         134         208.3         362         58,470           Jul         6,898         182         222.5         254         52,600           Aug         5,849         104         188.7         234         55,760

12 Month Total = 95,907,000 lbs 901,940 gals x \$ .99 = \$892,920.

Winter Total = 56,473,000 lbs 550,760 gals x \$ .99 = \$545,252.

Summer Total = 39,434,000 lbs 351,180 gals x \$ .99 = \$347,668.

PROJECT:

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM USE EVALUATION

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

CENTRAL HEATING PLANT BUILDING 332 MAKE-UP WATER USAGE ( Actual - Based on Facilities Engineering Log ) ( October 1989 thru September 1990 )

Year	Month	Feedwater 1000 lb	Gallons	Make-up Gallons	%
1989	Oct	6,535	784,513	297,260	37.9
	Nov	8,077	969,627	359,029	37.02
	Dec	11,367	1,364,585	642,971	47.1
1990	Jan	9,462	1,135,894	669,670	58.95
	Feb	8,838	1,060,984	445,111	41.95
	Mar	10,251	1,230,612	498,100	40.47
	Apr	8,724	1,047,298	475,404	45.39
	May	7,554	906,842	472,611	52.1
	Jun	6,287	754,741	382,270	50.6
	Jul	6,329	759,783	406,260	53.4
	Aug	5,880	705,882	354,130	50.1
	Sep	6,382	766,146	319,721	45.29
	11	95,686 lbs		5,322,537 ga	ls <b>4</b> 6.3%

WATER COST

Mid-April thru Mid-October = 2,318,116 gals

2,318,116 gals x \$ 1.28 / 1000 gals = \$ 2,967.

WATER TREATMENT

2,318,116 GALS X \$ .98 / 1000 gals = \$ 2,273.

\$ 5,240.

BLDG, # 332 HEATING PLANT AND CENTRAL STEAM DISTRIBUTION SYSTEM MAINTENANCE ESTIMATE,

BASED ON FT. BELVOIR CHARGE OF # 9,97/1000 165 STM. TO USERS.

# FUEL COST

901,940 GAL. #6 EXPENDED to PRODUCE 95,907,000 lbs of stm = 106.33 lbs/GAL

:. 1000 lbs sTM = 9.4 GALS #6 @ .64 = \$46.02 / 1000 lbs 9.97 / 1000 lbs

-6.02 #6 COST

3.95 LEFT FOR PLANT & DIST, SYSTEM MAINTENANCE

# #332 HEATING PLANT OPERATION & MAINTENANCE / YR

\$211,020. CONTRACT + 15,720. = 226,740/95,907 KIGS \$2.36/1000165

-2.36/1000165

\$1.59 / 1000 lbs FOR DISTRIBUTION SYSTEM MAINTENANCE

# BRADL STEAM DISTRIBUTION SYSTEM MAINTENANCE!

# 1.59/1000 lbs x 95,907 Klbs = 152,492/YR = 12,708/Mo.

CENTRAL HEATING PLANT #332

PLAUT EFFICIENCY

OVERALL - 12 MONTHS OCT 1989  $\rightarrow$  SEPT 1990 95,907 K 165 STM. PRODUCED w/901,940 GALS # 6 OIL  $\frac{95,907,000}{901,940} = \frac{106.33 \text{ lbs}}{3} / \text{GAL}$ 

106,330 BTU 149,700 BTU/GAL #6 71.02 % EFF.

CLIENT:		GINEERING .	APPLICATIONS	
:  #332 Summer Steam Alternatives	LAU	CONSUL	TANTS	
PROJECT: ENERGY SAUNGS	MADE CHK.	REV	JOB	
OPPORTUNITY SURVEY	REF VP		CHT	
SUBJECT: #332 PLANT EFFICIENCY			EHT M-	

3 HP

BOILER #1 (1965) ELECTRICAL CONSUMPTION 20000 KS/HR @ 130 PSI (DESIGN) HIGH TEMP. INDUCED DRAFT FAN (81) 16,900 CFM @ 600°F 10 HP 8.54 KW 沙北 (39 8000 4FM) FORCED DRAFT FALL 6.48 30 HP (90) FEED WATER PUMP 20.52 阳和 (88) ECOSTER PUMP 6.48 3 HP (84) 500 GPH OIL PUMP SET 2.71 4 HP (34) CHEMIKAL FEED PUMP ,22

(84) 26200 CFM

2.71

PROPELLER HAN

# ELECTRICAL CONSUMPTION

			#	HBTU
8.54 x 4044	= 34,535	× .0616/kwh	= 2127	117.83
6.48 × 4044	<b>2</b> 6,205	*	= 1614	89.41
20.52 × 4044	- = 82982	×	= 5111	283,15
6.48 × 4044	= 26 205	×	= 1614	89,41
2,71 × 4044	= 10,959	×	= 675	37,39
,22 x 4044	= 389	*	<del>-</del> 54	2.99
2.71 × 4044	= 10 959	×	= 475	37.39
			# 11,870 	657.6 × 2
TOTAL YEAR	LY ELECTRIC	CONSUMPTION =	* 23,740.	1315,7 METU
ASSUME 80%	OF ELECTRIC	CAL LOAD WILL BE	x.8	×,3
REDUNDANT	W/1422 ::	15 SAVINGS	18,992.	1057.1 MRTU

PROJECT:

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM USE EVALUATION

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

#### Additional 300 Area buildings that use summer steam

BLDG. #	LBS/HI
314	45
315	45
316	70
318	115
324	115
325	70
326	20

480 lbs/HR x 24 = 11,520 lbs/DAY

x 183.5 days = 2,114,400 lbs/summer

## ENERGY EXPENDED FROM CENTRAL PLANT #332

w/ 332 @ 71 percent efficiency = 106.33 lbs/GAL #6 oil

2,114,400/106.33 = 19,886 gals #6 x 149,700 BTU/GAL

= -2976.8 MBTU by 332 for other 7 bldgs

#### ENERGY EXPENDED FROM CENTRAL PLANT #1422

w/ 1422 @ 74 percent efficiency = 110.78 lbs/GAL #6 oil

2,114,400/110.78 = 19,087 gals #6 x 149,700 BTU/GAL

= -2857.2 MBTU by 1422 for other 7 bldgs

PROJECT:

ENERGY SAVINGS OPPORTUNITY SURVEY

300 AREA SUMMER STEAM USE EVALUATION

LOCATION:

FT BELVOIR, VA.

PREPARED BY:

Engineering Applications Consultants

ESTIMATE OF DISTRIBUTION SYSTEM ENERGY LOSSES

Central Heating Plant #332

Mid-April through Mid-October

Total steam produced = 39,434,000 lbs stm

Total #6 fuel oil expended = 351,180 gals

39,434,000 lbs stm (actual steam produced as per log ) -20,030,000 lbs stm (E20 estimated energy use for 10 bldgs)

\_\_\_\_\_\_

19,404,000 lbs stm

- 2,114,400 lbs stm (estimated energy for other 7 bldgs)

17,289,600 lbs stm (distribution system losses =

43.8 percent of total production)

#### MAKEUP WATER RATE

The actual average rate from April '89 thru Sept '90 = 46.3 percent of feedwater which seems to enforce a poor distribution system theory.

**BUILDING 307** 

#### DESIGN PARAMETERS, SHGs

Location : FT. BELVOIR, VIRGINIA Prepared By : ENGG APPLICATIONS CONSUL

6022890201 Page 1 of 1 Carrier Hourly Analysis Program

10-16-90

#### DESIGN WEATHER PARAMETERS

City Name..... FT. BELVOIR Location....: VIRGINIA Latitude....: 38.4 deg Elevation..... 69.0 ft Summer Design Dry Bulb Temp..... 90.0 F Summer Design Wet Bulb Temp..... 75.0 F Daily Temperature Range..... 23.0 F Winter Design Dry Bulb Temp..... 12.0 F Atmospheric Clearness Number..... 1.00

TABLE 1. MAXIMUM SOLAR HEAT GAINS - AVERAGE DAYS (BTU/hr/sqft)

Month	NE	E	SE	s	SW	W	NW	N	Hor
Jan	24.2	61.1	97.3	110.1	97.3	61.1	24.2	24.2	80.0
Feb	31.8	74.8	105.7	113.8	105.7	74.8	31.8	31.8	107.2
Mar	40.8	87.0	106.9	108.0	106.9	87.0	40.8	40.8	136.8
Apr	60.0	97.4	104.4	97.2	104.4	97.4	60.0	49.3	164.3
May	74.9	103.0	98.4	84.0	98.4	103.0	74.9	54.9	181.8
Jun	85.1	109.3	97.5	79.2	97.5	109.3	85.1	57.9	195.2
Jul	80.6	106.7	98.1	81.4	98.1	106.7	80.6	56.4	189.3
Aug	69.1	104.1	105.7	94.4	105.7	104.1	69.1	52.2	177.6
Sep	52.3	99.3	114.8	111.6	114.8	99.3	52.3	45.4	158.1
Oct	36.4	88.3	117.7	122.9	117.7	88.3	36.4	36.4	128.2
Nov	26.7	66.5	101.8	113.3	101.8	66.5	26.7	26.7	89.4
Dec	21.4	53.0	87.6	100.9	87.6	53.0	21.4	21.4	68.4

TABLE 2. MAXIMUM SOLAR HEAT GAINS - DESIGN DAYS (BTU/hr/sqft)

NE	E	SE	s	sw	W	NW	N	Hor
20.4	158.9	243.9	253.8	243.9	158.9	20.4	20.4	142.0
53.0	189.1	246.5	237.5	246.5	189.1	53.0	24.7	187.7
95.9	219.8	234.5	200.7	234.5	219.8	95.9	29.4	229.0
141.6	224.4	200.1	146.7	200.1	224.4	141.6	34.1	256.0
166.1	220.1	170.7	104.6	170.7	220.1	166.1	37.4	268.0
173.2	215.4	156.7	87.8	156.7	215.4	173.2	47.4	269.7
163.7	215.7	166.5	101.4	166.5	215.7	163.7	38.3	264.7
136.4	216.6	193.1	141.7	193.1	216.6	136.4	35.8	251.3
90.3	207.2	224.7	194.9	224.7	207.2	90.3	30.6	221.4
52.0	182.7	238.2	230.6	238.2	182.7	52.0	25.5	184.4
20.7	156.1	239.8	249.9	239.8	156.1	20.7	20.7	141.3
18.5	141.9	236.4	254.2	236.4	141.9	18.5	18.5	122.2
	20.4 53.0 95.9 141.6 166.1 173.2 163.7 136.4 90.3 52.0 20.7	20.4 158.9 53.0 189.1 95.9 219.8 141.6 224.4 166.1 220.1 173.2 215.4 163.7 215.7 136.4 216.6 90.3 207.2 52.0 182.7 20.7 156.1	20.4 158.9 243.9 53.0 189.1 246.5 95.9 219.8 234.5 141.6 224.4 200.1 166.1 220.1 170.7 173.2 215.4 156.7 163.7 215.7 166.5 136.4 216.6 193.1 90.3 207.2 224.7 52.0 182.7 238.2 20.7 156.1 239.8	20.4 158.9 243.9 253.8 53.0 189.1 246.5 237.5 95.9 219.8 234.5 200.7 141.6 224.4 200.1 146.7 166.1 220.1 170.7 104.6 173.2 215.4 156.7 87.8 163.7 215.7 166.5 101.4 136.4 216.6 193.1 141.7 90.3 207.2 224.7 194.9 52.0 182.7 238.2 230.6 20.7 156.1 239.8 249.9	20.4 158.9 243.9 253.8 243.9 53.0 189.1 246.5 237.5 246.5 95.9 219.8 234.5 200.7 234.5 141.6 224.4 200.1 146.7 200.1 166.1 220.1 170.7 104.6 170.7 173.2 215.4 156.7 87.8 156.7 163.7 215.7 166.5 101.4 166.5 136.4 216.6 193.1 141.7 193.1 90.3 207.2 224.7 194.9 224.7 52.0 182.7 238.2 230.6 238.2 20.7 156.1 239.8 249.9 239.8	20.4 158.9 243.9 253.8 243.9 158.9 53.0 189.1 246.5 237.5 246.5 189.1 95.9 219.8 234.5 200.7 234.5 219.8 141.6 224.4 200.1 146.7 200.1 224.4 166.1 220.1 170.7 104.6 170.7 220.1 173.2 215.4 156.7 87.8 156.7 215.4 163.7 215.7 166.5 101.4 166.5 215.7 136.4 216.6 193.1 141.7 193.1 216.6 90.3 207.2 224.7 194.9 224.7 207.2 52.0 182.7 238.2 230.6 238.2 182.7 20.7 156.1 239.8 249.9 239.8 156.1	20.4 158.9 243.9 253.8 243.9 158.9 20.4 53.0 189.1 246.5 237.5 246.5 189.1 53.0 95.9 219.8 234.5 200.7 234.5 219.8 95.9 141.6 224.4 200.1 146.7 200.1 224.4 141.6 166.1 220.1 170.7 104.6 170.7 220.1 166.1 173.2 215.4 156.7 87.8 156.7 215.4 173.2 163.7 215.7 166.5 101.4 166.5 215.7 163.7 136.4 216.6 193.1 141.7 193.1 216.6 136.4 90.3 207.2 224.7 194.9 224.7 207.2 90.3 52.0 182.7 238.2 230.6 238.2 182.7 52.0 20.7 156.1 239.8 249.9 239.8 156.1 20.7	20.4 158.9 243.9 253.8 243.9 158.9 20.4 20.4 53.0 189.1 246.5 237.5 246.5 189.1 53.0 24.7 95.9 219.8 234.5 200.7 234.5 219.8 95.9 29.4 141.6 224.4 200.1 146.7 200.1 224.4 141.6 34.1 166.1 220.1 170.7 104.6 170.7 220.1 166.1 37.4 173.2 215.4 156.7 87.8 156.7 215.4 173.2 47.4 163.7 215.7 166.5 101.4 166.5 215.7 163.7 38.3 136.4 216.6 193.1 141.7 193.1 216.6 136.4 35.8 90.3 207.2 224.7 194.9 224.7 207.2 90.3 30.6 52.0 182.7 238.2 230.6 238.2 182.7 52.0 25.5 20.7 156.1 239.8 249.9 239.8 156.1 20.7 20.7

#### MASTER SCHEDULE SUMMARY

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program

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MASTER SCHEDU		***** • OCC	***** UPANC		****	****	**** Hou	***** rly P		***** tages	*****	****
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	0	0	0	0	0	10	50	100	100	100	100
Saturday	0	0	0	0	0	0	5	5	5	10	10	10
Sunday	0	0	0	0	0	0	0	5	5	5	5	5
DESIGN	0	0	0	0	0	10	20	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	80	50	10	10	5	5	0	0
Saturday	10	10	10	5	5	5	5	5	0	0	0	0
Sunday	5	5	5	5	5	5	0	0	0	0	0	0
DESIGN	100	100	100	100	100	100	100	20	10	0	0	0
**************************************	_		**** HTING	****	****	****		***** rly P		***** tages	****	****
Hour>		1	2	3	4	5	6	   7	8	   9	   10	11
Hour			<u>2</u> 		<del>-</del>	3 		' 				
Weekday	5	5	5	5	5	5	20	80	100	100	100	100
Saturday	5	5	5	5	5	5	15	15	20	40	50	50
Sunday	5	5	5	5	5	5	5	15	20	30	30	30
DESIGN	10	10	10	10	10	20	50	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	90	70	40	30	20	20	5	5
Saturday	50	50	50	50	50	40	30	20	5	5	5	5
Sunday	30	30	30	20	20	20	20	5	5	5	5	5
DESIGN	100	[100	100	100	100	100	100	50	20	10	10	10 
**************************************		***** • EQU			****	****		***** rly P	***** ercen	***** tages	****	***
Hour>	0	1	2	3	4	5	6	7 	8	9	10	11
Weekday	5	5	5	5	5	5	20		l .	100	1	100
Saturday	5	5	5	5	5	5	10	10	15	20	20	20
Sunday	5	5	5	5	5	5	5	10	10	10	10	20
DESIGN	10	10	10	10	10	20	40	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	80	50	20	10	5	5	5	5
Saturday	20	20	20	10	10	10	10	10	5	5	5	5
Sunday	20	15	15	10	10	10	10	5	5	5	5	5
DESIGN	100	100	100	100	100	100	100	40	20	10	10	10
******	****	****	****	****	****	****	****	****	****	****	****	***

MASTER SCHEDULE SUMMARY

Page 2 01-29-91

Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program

6100190202

Hour>		0	1	2	3	4	5	6	7	8	9	10	1
weekday	1	0	0	0	0	0	5	10	10	20	20	20	8
Saturday	ı	0	0	0	0	0	2	2	2	5	5	5	
Sunday		0	0	0	0	0	0	0	2	2	2	2	
DESIGN		0	0	0	0	0	5	5	20	20	20	20	8
Hour>		12	13	14	15	16	17	18	19	20	21	22	2
veekday	1	80	20	20	20	10	10	5	5	5	2	0	]
Saturday		5	5	5	2	2	2	2	2	0	0	0	1
Sunday		2	2	2	2	2	2	0	0	0	0	0	
ESIGN		80	20	20	20	10	10	5	5	5	2	0	1

DAY TYPE DATA

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program 6022890201

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Month	DAY TYPE 1 Weekday	DAY TYPE 2 Saturday	DAY TYPE 3 Sunday	Total Days/Month
January	21	4	6	31
February	19	4	5	28
March	22	5	4	31
April	21	4	5	30
May	22	4	5	31
June	21	5	4	30
July	21	4	6	31
August	23	4	4	31
September	19	5	6	30
October	23	4	4	31
November	21	4	5	30
December	20	5	6	31

#### **ENGINEERING ANALYSIS**

Sheet		of	
Bv:	REF		

#### Calculations for Infilt@ration

	Building 50 /		
Project: ESOS, Fort B	ELVOIR	Date: SEPT.	1990
Contract No: DACA-31-89	-C=0189 EAC Project	t No.: 89034.0	01
Calculations based on :	ASHRAE 1989 Page F 2.3.1	4.	
Building Leakage Area	Effective Leakage Area, in <sup>2</sup>	Suilding Component Parameter	Building Leakage Area D <sub>i</sub> L <sub>i</sub> , in <sup>2</sup>
	L,	$\mathbf{D}_{i}$	L
Sill foundation Joints, ceiling/wall Windows Doors Wall - Window frames - Door frames Elec. outlet/switch Recessed lights Pipe penetration Exhaust fans Duct penetration FCU openings	0.19/ft. of perimeter 0.12/ft. of wall 0.063/ft². of window 0.215/ft². of doors 0.15/ft². of window 0.072/ft². of door 0.16/fixture 1.6/fixture 1.55/in². of pipe, 6.0/fan 2.2/SF 0 x 1/3(SF/unit) x 2.2	400 ft. 400 ft. 2421 ft <sup>2</sup> . 168 ft <sup>2</sup> . 1154 ft <sup>2</sup> . 104 ft. 100 ft. 10 ft. 14 ft. 755F	76.00 -0 -0 -1 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0

Infiltration  $Q(cfm) = L \times (A \Delta t + Bv^2)^{1/2}$ 

(ASHIKAE 1989, P. 23.17, EQ.33)

#### Winter

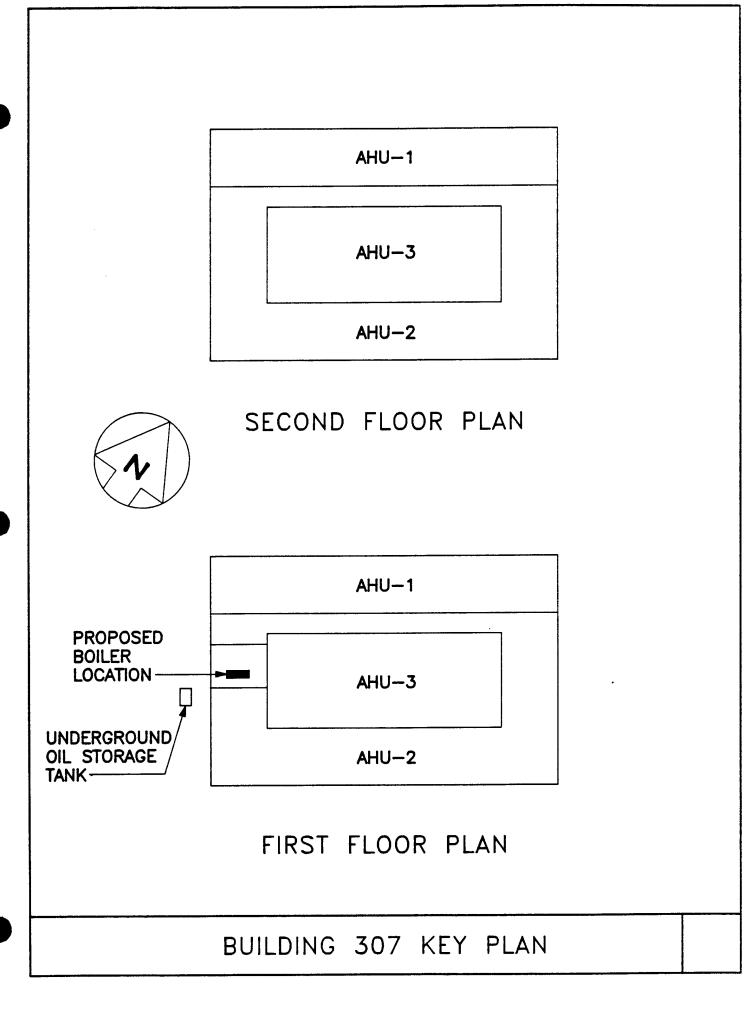
Summer

Q(cfm)= =  $L(0.01313 \times 51 + 0.0157 \times 14^2)^{1/2}$ =  $L \times 2.2$ = 1417.1 x 2.2 = 3118 CFM

Rate = 
$$\frac{3118}{19,200}$$
 = 0.162 CFM/SF

 $= L \times 1.45$ = 1417.1 x 1.45 = 2055 CFM Rate = 2055 19,200 = 0.|| CFM/SF

=  $L(0.0313 \times 15 + 0.0157 \times 10^2)^{1/2}$ 



Space Name : 11	9 RC-1 1 1			10-02-90
Prepared By : E	NGG APPLICATION	ONS CONSUL		6022890201
Carrier Hourly	Analysis Progr	ram		Page 1 of 3
*****			*****	****
-	alls Roo:			
U-Value: 0	0.090	1.060	Building Weight	: M
Weight :			Glass Factor	: 1.00
Color :	D D		Internal Shades	? N
People : sqft/	person = 50	30.0 Schedule	= 1 Activity	y Level = 2
Lights : W/sqf		4.14 Schedule	= 2 Wattage	Mult. = 1.26
: Fixtu	re Type =	1 Recessed,	not vented	
SPACE NAME =	119 RC-1 1			
		F	loor Area :	
Exposure :	NW	E R	oof Area :	0.0 sqft
Wall Area :	374.0	0.0 C	oof Area : urrent	
Exposure : Wall Area : Glass Area :	0.0	0.0 E	lements : El,	Pt,Pt,In,Gr
******	******	*****	*****	*****
ADDITIONAL ELEM	ENT - Other E	lectric		
W/sqft				
Motal Watte	= 2,5	52		
TOTAL MALLE	-,-			
Schedule No.	= *******	3  *************** on	******	
Schedule No.  ***********  ADDITIONAL ELEM  Area =	= ************************************	3 **************** on  Uncon	d. Space Temp:Cod	oling = 85.0
Schedule No.  ************  ADDITIONAL ELEM  Area =  U-Value =	= ************************************	3 *********** on Uncon r/sqft/F Uncon	d. Space Temp:Cod. Space Temp:He	oling = 85.0 h
Schedule No.  ***************  ADDITIONAL ELEM  Area = U-Value =	= ************************************	3 *************  Uncon r/sqft/F Uncon	d. Space Temp:Cod	oling = 85.0 h
Schedule No.  *************  ADDITIONAL ELEM  Area = U-Value =  ****************  ADDITIONAL ELEM	=	3 *************  Uncon r/sqft/F Uncon *************	d. Space Temp:Cod. Space Temp:Hea	oling = 85.0 1 ating = 40.0 1
Schedule No.  *************  ADDITIONAL ELEM  Area = U-Value =  *************  ADDITIONAL ELEM  Area =	=	3 ************ Uncon r/sqft/F Uncon *********** Uncon	d. Space Temp:Codd. Space Temp:Hedd.	oling = 85.0 1 ating = 40.0 1 ************************************
Schedule No.  *************  ADDITIONAL ELEM  Area = U-Value =  *************  ADDITIONAL ELEM  Area =	=	3 ************ Uncon r/sqft/F Uncon *********** Uncon	d. Space Temp:Cod. Space Temp:Hea	oling = 85.0 : ating = 40.0 : ************************************
Schedule No.  *************  ADDITIONAL ELEM  Area = U-Value =  Area = U-Value =	=	Uncon r/sqft/F Uncon  w************  Uncon  Uncon  Uncon  Uncon  Uncon  Uncon	d. Space Temp:Cod  ***********************************	oling = 85.0 : ating = 40.0 : ************************************
Schedule No.  **************  ADDITIONAL ELEM  Area = U-Value =  Area = U-Value =  U-Value =  ***********************************	=	Uncon  //sqft/F Uncon  Uncon  //sqft/F Uncon  //sqft/F Uncon  //sqft/F Uncon	d. Space Temp:Codd. Space Temp:Hedd.	oling = 85.0 ating = 40.0 ***********************************
Schedule No.  **************  ADDITIONAL ELEM  Area = U-Value =  **************  ADDITIONAL ELEM  Area = U-Value =  ***************  ADDITIONAL ELEM  Cooling :	=	3  ************  Uncon  r/sqft/F Uncon  Uncon  Uncon  Uncon  Uncon  **********************************	d. Space Temp:Codd. Space Temp:Codd. Space Temp:Codd. Space Temp:Codd. Space Temp:Hei	oling = 85.0 : ating = 40.0 : ************************************
Schedule No.  **************  ADDITIONAL ELEM  Area = U-Value =  **************  ADDITIONAL ELEM  Area = U-Value =  ***************  ADDITIONAL ELEM  Cooling :	=	3  ************  Uncon  r/sqft/F Uncon  Uncon  Uncon  Uncon  Uncon  **********************************	d. Space Temp:Codd. Space Temp:Codd. Space Temp:Codd. Space Temp:Codd. Space Temp:Hei	oling = 85.0 1 ating = 40.0 1 ************************************
Schedule No.  *************  ADDITIONAL ELEM  Area = U-Value =  ***********  ADDITIONAL ELEM  Area = U-Value =  *************  ************  Cooling : Heating :	580.0 sqft 0.240 BTU/h:  258.0 sqft 0.330 BTU/h:	3  ************  Uncon  r/sqft/F Uncon  *********  Uncon  Uncon  Uncon  ************  ***********  *********	d. Space Temp:Codd. Space Temp:Codd. Space Temp:Codd. Space Temp:Codd. Space Temp:Hei	oling = 85.0 : ating = 40.0 : ************************************
Schedule No.  ***************  ADDITIONAL ELEM  Area = U-Value =  ************  ADDITIONAL ELEM  Area = U-Value =  *************  ADDITIONAL ELEM  Cooling : Heating : Typical :	=	3  *************  Uncon  r/sqft/F Uncon  ***********  Uncon  Uncon  ***********  Uncon  *********  Uncon  *********  Uncon  ********  Uncon  *********  *******  *******  ********	d. Space Temp:Codd. Space Temp:Head.  d. Space Temp:Codd. Space Temp:Head.  c. Space Temp:Head.  c. Space Temp:Head.	oling = 85.0 ating = 40.0 ***********************************
Schedule No.  ***************  ADDITIONAL ELEM  Area = U-Value =  ************  ADDITIONAL ELEM  Area = U-Value =  *************  ADDITIONAL ELEM  Cooling : Heating : Typical :	=	3  *************  Uncon  r/sqft/F Uncon  ***********  Uncon  Uncon  ***********  Uncon  *********  Uncon  *********  Uncon  ********  Uncon  *********  *******  *******  ********	d. Space Temp:Codd. Space Temp:Head.  d. Space Temp:Codd. Space Temp:Head.  ***********************************	oling = 85.0 ating = 40.0 ***********************************
Schedule No.  ***************  ADDITIONAL ELEM  Area = U-Value =  ***************  ADDITIONAL ELEM  Area = U-Value =  ***************  Cooling : Heating : Typical :  ***********************************	=	3  *************  Uncon  r/sqft/F Uncon  ***********  Uncon  Uncon  ***********  Uncon  *********  Uncon  *********  Uncon  ********  Uncon  *********  *******  *******  ********	d. Space Temp:Codd. Space Temp:Head.  d. Space Temp:Codd. Space Temp:Head.  c. Space Temp:Head.  c. Space Temp:Head.	oling = 85.0 : ating = 40.0 : ************************************
Schedule No.  ***************  ADDITIONAL ELEM  Area = U-Value =  U-Value =  U-Value =  ***************  ADDITIONAL ELEM  Cooling : Heating : Typical :  ******************  ADDITIONAL ELEM	=	3  ***************  Uncon r/sqft/F Uncon  Uncon r/sqft/F Uncon  ************  ation  t = 64 t = 93 t = 93 ************************************	d. Space Temp:Codd. Space Temp:Head.  d. Space Temp:Codd. Space Temp:Head.  c. Space Temp:Head.  c. Space Temp:Head.	oling = 85.0 1 ating = 40.0 1 ************************************

					4	~ ~ ~
: 120 RC-1					_	0-02-9
		ONSUL				289020
					-	
			******	*****	****	****
	2.2.2.2					
		1.060				M
D	D		Internal	Shades	?	N
qft/person	= 400.0	Schedule	= 1	Activity	Level	=
					Mult.	= 1.2
ixture Type	= 1 R	ecessed,	not vent	:ed		
= 120 RC-	1 1 1 (TY	P 121				
		F				_
: 1	NW			:	0.	0 sqft
			*****	*****	*****	*****
ELEMENT - Ot	her Electri	.c				
	4.40					
	•					
*********** ELEMENT - Pa:		****	******	*****	*****	*****
ELEMENT - Pa	rtition  sqft	Uncond	l. Space	Temp:Coo	 ling =	85.0
ELEMENT - Pa	rtition	Uncond	l. Space	Temp:Coo	 ling =	85.0
ELEMENT - Pa	rtition sqft BTU/hr/sqft	Uncond /F Uncond	l. Space	Temp:Coo Temp:Hea	ling = ting =	85.0 40.0
400.0 (0.240 )	rtition sqft BTU/hr/sqft ********	Uncond /F Uncond	l. Space l. Space	Temp:Coo Temp:Hea	ling = ting =	85.0 40.0
400.0 0.240 1	rtition sqft BTU/hr/sqft ******** filtration M/sqft =	Uncond /F Uncond	I. Space I. Space ********	Temp:Coo Temp:Hea	ling = ting =	85.0 40.0
400.0 0.240 1	rtition sqft BTU/hr/sqft ******** filtration M/sqft = M/sqft =	Uncond /F Uncond ************************************	Space	Temp:Coo Temp:Hea	ling = ting =	85.0 40.0
400.0 0.240 0.240 1	rtition sqft BTU/hr/sqft ******** filtration	Uncond /F Uncond ************************************	Space	Temp:Coo Temp:Hea	ling = ting = ******	85.0 40.0 *****
400.0 0 0.240 1	rtition sqft BTU/hr/sqft ********* filtration M/sqft = M/sqft = M/sqft = ************	Uncond /F Uncond ************************************	Space	Temp:Coo Temp:Hea	ling = ting = ******	85.0 40.0 *****
400.0 0 0.240 1	rtition sqft BTU/hr/sqft ********* filtration M/sqft = M/sqft = M/sqft =	Uncond /F Uncond ************************************	Space	Temp:Coo Temp:Hea	ling = ting = ******	85.0 40.0 *****
400.0 0 0.240 1	rtition sqft BTU/hr/sqft ********* filtration M/sqft = M/sqft = M/sqft = ********** ound	Uncond /F Uncond ************************************	Space	Temp:Coo Temp:Hea	ling = ting = ******	85.0 40.0 *****
	ENGG APPL  Ty Analysis  *******  Walls  0.310  100  D   Ift/person  /sqft  ixture Type  = 120 RC-  : 155 : 103  *********  ELEMENT - Ot	ENGG APPLICATIONS CONTROL AND SET IN ANALYSIS PROGRAM  ***********************************	ENGG APPLICATIONS CONSULTLY Analysis Program  ***********************************	: ENGG APPLICATIONS CONSUL  rly Analysis Program  ***********************************	ENGG APPLICATIONS CONSULTLY Analysis Program  Walls Roof Glass  0.310 0.090 1.060 Building Weight  100 L Glass Factor D D Internal Shades  Off (Person = 400.0 Schedule = 1 Activity  (sqft = 4.08 Schedule = 2 Wattage  ixture Type = 1 Recessed, not vented  = 120 RC-1 1 1 (TYP 121  Floor Area :  NW E Roof Area :  155.0 0.0 Current  103.0 0.0 Elements : El,  ELEMENT - Other Electric  = 4.40  1,760	### STATE ST

							4	
	122 RC-4						_	0-02-90
Prepared By			CONSUL	,				289020
Carrier Hour	ly Analysis	Program					Page	1 of
******					*****	****	*****	****
	Walls							
U-Value :	0.310	0.090	1.06	0	Buildin	g <b>Weig</b> ht	:	M
Weight :	100	L			Glass F	actor	: 1.	00
Color :	D	D			Interna	l Shades	?	N
People : sq	ft/person	= 400.0	) Sche	dule	= 1	Activit	v Level	= ;
Lights : W/	enft	= 4.80	Sche	dule	<b>=</b> 2	Wattage	Mult.	= 1.2
o Fi	xture Type	= 1	Reces	sed.	not ven	ted		_
	.xcure lype							
SPACE NAME	= 122 RC-	-4 1 1						
				Fl	oor Are	a :		
Exposure	*	NW	N	IE Ro	of Area	. •	0.	0 sqft
Wall Area	: 155	5.0	258.	0 Cu	rrent			
Glass Area	: 103	3.0	0.	0 E1	ements	: El	,Pt,In,G	r
*****	*****	****	****	****	*****	*****	*****	*****
ADDITIONAL E								
₩/anft	=	4.40						
W/sqft		4.40 1.760						
Total Watt	.g =	1,760						
• =	.g =		. <b></b>	<b>الله حدة الله حدة طبير د</b>				
Total Watt	s =  O. =  ********	1,760 3	*****	***	*****		 *****	*****
Total Watt	:s =	1,760 3 **********						
Total Watt Schedule N ********* ADDITIONAL E Area =	:s =	1,760 3 ********** artition sqft	 U	 Incond	. Space	Temp:Co	 oling =	85.0
Total Watt Schedule N ********** ADDITIONAL E Area = U-Value =	ES = 10. = 1	1,760 3 ********** artition sqft BTU/hr/sq	U Ift/F U	Incond	l. Space	Temp:Co	oling = ating =	85.0 : 40.0 :
Total Watt Schedule N ********** ADDITIONAL E Area = U-Value =	S = 10. = 10. = 10.	1,760 3 ********** artition sqft BTU/hr/sq	U Ift/F U	Incond	l. Space	Temp:Co	oling = ating =	85.0 40.0
Total Watt Schedule N ********* ADDITIONAL E Area = U-Value =  ************ ADDITIONAL E	######################################	1,760 3 ******** artition sqft BTU/hr/sq	U Ift/F U	Incond Incond	l. Space l. Space	Temp:Co	oling = ating =	85.0 40.0
Total Watt Schedule N ********** ADDITIONAL E  Area = U-Value =  *********** ADDITIONAL E	######################################	1,760 3 ******** artition sqft BTU/hr/sq ******** afiltration	Uft/F U	Incond Incond	l. Space l. Space	Temp:Co	oling = ating =	85.0 : 40.0 :
Total Watt Schedule N ********** ADDITIONAL E  Area = U-Value =  *********** ADDITIONAL E	######################################	1,760 3 ******** artition sqft BTU/hr/sq ******** afiltration	Uft/F U	Incond	Space Space	Temp:Co	oling = ating =	85.0 : 40.0 :
Total Watt Schedule N ********* ADDITIONAL E  Area = U-Value =  ********** ADDITIONAL E	######################################	1,760 3 ******** artition sqft BTU/hr/sq ******** afiltration	Uft/F U	Jncond Jncond ******	Space Space	Temp:Co	oling = ating =	85.0 40.0
Total Watt Schedule N ********** ADDITIONAL E  Area = U-Value =  ********** ADDITIONAL E  Cooling Heating Typical	######################################	1,760 3  ********  artition  sqft BTU/hr/sq  *******  afiltration  FM/sqft = FM/sqft = FM/sqft =	Uft/F U	Jncond Jncond ****** 44 64 64	Space Space ****** CFM CFM	Temp:Co	oling = ating = ******	85.0 40.0 *****
Total Watt Schedule N ************ ADDITIONAL E Area = U-Value =  *********** ADDITIONAL E  Cooling Heating Typical ************************************	######################################	1,760 3 ******** artition sqft BTU/hr/sq ******* afiltration  FM/sqft FM/sqft FM/sqft FM/sqft FM/sqft	Uft/F U	Jncond Jncond ****** 44 64 64	Space Space ****** CFM CFM	Temp:Co	oling = ating = ******	85.0 40.0 *****
Total Watt Schedule N  **********  ADDITIONAL E  Area = U-Value =  **********  ADDITIONAL E  Cooling Heating Typical  **********  ADDITIONAL E	######################################	1,760 3 ******** artition sqft BTU/hr/sq ******* afiltration  FM/sqft FM/sqft FM/sqft FM/sqft FM/sqft FM/sqft FM/sqft	Uft/F U	######################################	Space Space ****** CFM CFM	Temp:Co	oling = ating = ******	85.0 40.0 *****
Total Watt Schedule N  *********** ADDITIONAL E  Area = U-Value =  *********** ADDITIONAL E  Cooling Heating Typical  ***********************************	######################################	1,760 3 ******** artition sqft BTU/hr/sq ******* afiltration  FM/sqft FM/sqft FM/sqft FM/sqft FM/sqft FM/sqft FM/sqft	Uft/F U	Jncond Jncond ****** 44 64 64 *****	Space Space ****** CFM CFM	Temp:Co	oling = ating = ******	85.0 40.0 *****

10-02-90 Space Name: 218 RC-5 1 2 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.310 0.090 1.060 Building Weight : M
Weight: 100 L Glass Factor : 1.00
Color: D D Internal Shades ? N People : sqft/person = 400.0 Schedule = 1 Activity Level = 2 Lights : W/sqft = 3.20 Schedule = 2 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented \_\_\_\_\_ SPACE NAME = 218 RC-5 1 2 Floor Area : 400.0 sqft 400.0 sqft \*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric 4.40 1,760 W/sqft = Total Watts = Schedule No. \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Partition 167.0 sqft Uncond. Space Temp:Cooling = 85.0 F U-Value = 0.330 BTU/hr/sqft/F Uncond. Space Temp:Heating = 65.0 F \_\_\_\_\_ \*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Partition Area = 400.0 sqft Uncond. Space Temp:Cooling = 85.0 F U-Value = 0.540 BTU/hr/sqft/F Uncond. Space Temp:Heating = 40.0 F \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration Cooling : 0.11 CFM/sqft = 44 CFM Heating : 0.16 CFM/sqft = 64 CFM Typical : 0.16 CFM/sqft = 64 CFM

Space Name : 2	719 RC-6						
Prepared By :			CONSUL				0-02-90 289020:
Carrier Hourly							1 of
*****	_	•	*****	*****	******	-	
	Walls	Roof	Glass				
J-Value :	0.310	0.090	1.060	Buildin	g Weight	:	M
	100	L			actor		00
Color :	D	D		Interna	l Shades	?	N
People : sqft	/person	= 0.0	Schedul	e = 1	Activity	Level	= ;
Lights : W/sq			Schedul		Wattage M		
: Fixt	ure Type	= 1	Recessed	l, not vent	ted		
SPACE NAME =	: 219 RC-	 6 1 2					
				Floor Area	a :	252.	0 sqft
Exposure :		NW	SW	Roof Area	:	252.	
Vall Area :	100	^		Current			-
	100	• 0	0.0	CULTEIIC			
Slass Area :	62	.3 *****	0.0	Elements	: El,F	Pt,In	*****
Glass Area : ************** ADDITIONAL ELE	62	.3 ******* her Electr	0.0	Elements	: El,F	Pt,In	*****
Glass Area : ************ ADDITIONAL ELE	62 ******** MENT - Oti	.3 ********** her Electr 4.40	0.0	Elements	: El,F ********	Pt,In	*****
Glass Area : ********** ADDITIONAL ELE W/sqft Total Watts	62 ******** MENT - Otl	.3 ******** her Electr  4.40 1,109	0.0	Elements	: El,F	Pt,In	*****
Glass Area : ************ ADDITIONAL ELE	62 ******** MENT - Otl	.3 ********** her Electr 4.40	0.0	Elements	: El,F	Pt,In	*****
Glass Area : ********** ADDITIONAL ELE W/sqft Total Watts	62 *******  MENT - Ot	.3 ******** her Electr 4.40 1,109 3	0.0	Elements	: E1,F	Pt,In ******	*****
Glass Area : ************************************	62 *******  MENT - Ot  = = = : : : : : : : : : : : : : : : :	.3 ******* her Electr 4.40 1,109 3 ***********	0.0	Elements ********	*****	*****	*****
Class Area : ************* ADDITIONAL ELE W/sqft Total Watts Schedule No.	62 *******  MENT - Oti  = = = *********  MENT - Pa:	.3 ******** her Electr 4.40 1,109 3 ********** rtition	0.0	Elements	********** ********* Temp:Cool	*******	*****  ***** 85.0
Class Area :  ************  ADDITIONAL ELE  W/sqft  Total Watts  Schedule No.  ************  ADDITIONAL ELE  Area =	62 *******  MENT - Ot  = = =  ********  MENT - Pa:  252.0 (0.540)	.3 ******** her Electr 4.40 1,109 3 ******** rtition sqft BTU/hr/sqf	0.0 ******** cic  Unco	Elements *********  *********  ond. Space ond. Space	********  ********  Temp:Cool	*******  ******  ling =	65.0
Class Area :  *********** ADDITIONAL ELE  W/sqft Total Watts Schedule No.  ********* ADDITIONAL ELE  Area = U-Value =	62 *******  MENT - Oti  = = =  MENT - Pa:  252.0 : 0.540 :	.3 ******** her Electr 4.40 1,109 3 ******** rtition sqft BTU/hr/sqf	Unco	Elements *********  *********  ond. Space ond. Space	********  ********  Temp:Cool	*******  ******  ling =	65.0
Area = U-Value = Cooling :	62  *******  *******  ******  252.0  0.540  *******  MENT - In:  0.11 CFI	.3 ******* her Electr 4.40 1,109 3 ****** rtition  sqft BTU/hr/sqf filtration  M/sqft =	0.0 ******* cic Unco	Elements *********  ond. Space ond. Space	********  ********  Temp:Cool	*******  ******  ling =	65.0
Area = U-Value = Cooling : Heating	62  ******  MENT - Otl  = = =  *******  MENT - Pa:  252.0 0 0.540 1	.3 ******* her Electr 4.40 1,109 3 ****** rtition Bqft BTU/hr/sqf filtration M/sqft = M/sqft =	0.0 ******* cic Unco	Elements *********  ond. Space ond. Space	********  ********  Temp:Cool	*******  ******  ling =	65.0

C Nome - 22	0 BC7 1	2				11	0-02-90
Space Name : 22 Prepared By : E			ICIII.			_	289020
			ISOL				1 of :
Carrier Hourly						-	
			lass				
U-Value: 0		1.090		Building W			
		L		Glass Fact			
Color :	D	D		Internal S	hades	7	N
People : sqft/	person =	: 330.0 S	Schedule	= 1 Ac	tivity I	Level	= :
Lights : W/sqf	t =	4.36 S	Schedule	= 2 Wa	ittage Mu	ılt.	= 1.20
	re Type =						
SPACE NAME =	220 RC-7	1 2					
J. 1.02 1.1.1.2			F1	oor Area	:	330.	0 sqft
Exposure :	NW	1	SW Ro	of Area			0 sqft
							-
		<b>)</b>		rrent			
Wall Area : Glass Area : **************** ADDITIONAL ELEM	178.4 40.6 ****	; :*****	0.0 Cu 0.0 El	rrent ements ******	•	:,In	****
Wall Area : Glass Area : ************ ADDITIONAL ELEM W/sqft Total Watts	178.4 40.6 ********* ENT - Othe	; :*****	0.0 Cu 0.0 El	ements	•	:,In *****	*****
Wall Area : Glass Area : *********** ADDITIONAL ELEM	178.4 40.6 ********* ENT - Othe	********** er Electric 	0.0 Cu 0.0 El	ements	•	:,In	*****
Wall Area : Glass Area : ************ ADDITIONAL ELEM W/sqft Total Watts	178.4 40.6 ********* ENT - Othe	4.40 1,452 3	0.0 Cu 0.0 El	ements	•	:,In	****
Wall Area : Glass Area : ************** ADDITIONAL ELEM W/sqft Total Watts Schedule No.	178.4 40.6 ********* ENT - Othe = = = ********** ENT - Part	4.40 1,452 3 **********	0.0 Cu 0.0 El	ements ******** ********* . Space Te	**************************************	***** *****	
Wall Area : Glass Area : ************** ADDITIONAL ELEM W/sqft Total Watts Schedule No.	178.4 40.6 ********* ENT - Othe = = = ********** ENT - Part	4.40 1,452 3	0.0 Cu 0.0 El	ements ******** ********* . Space Te	**************************************	***** *****	
Wall Area : Glass Area : ************** ADDITIONAL ELEM W/sqft Total Watts Schedule No. ************** ADDITIONAL ELEM Area =	178.4 40.6 ********* ENT - Othe = = = ********** ENT - Part	4.40 1,452 3 **********	0.0 Cu 0.0 El	ements ******** ********* . Space Te	**************************************	***** *****	
Wall Area : Glass Area : ************** ADDITIONAL ELEM W/sqft Total Watts Schedule No. ************** ADDITIONAL ELEM Area =	178.4 40.6 ******** ENT - Othe  = = ********* ENT - Part 330.0 sq 0.540 BT	4.40 1,452 3 ***********************************	0.0 Cu 0.0 El	ements ******** ********* . Space Te	**************************************	***** *****	
Wall Area : Glass Area : ************** ADDITIONAL ELEM W/sqft Total Watts Schedule No. ************ ADDITIONAL ELEM Area = U-Value =  **************** ADDITIONAL ELEM Cooling :	178.4 40.6 ******** ENT - Othe  = = ********* ENT - Part 330.0 sq 0.540 BT  ********* ENT - Infi	4.40 1,452 3 ***********************************	0.0 Cu 0.0 El	ements ********  *********  . Space Te . Space Te	**************************************	***** *****	
Wall Area : Glass Area : ************** ADDITIONAL ELEM W/sqft Total Watts Schedule No. *********** ADDITIONAL ELEM Area = U-Value =	178.4 40.6 ******** ENT - Othe  = = ********* ENT - Part 330.0 sq 0.540 BT  ********* ENT - Infi	######################################	0.0 Cu 0.0 El	ements ********  *********  Space Te  Space Te	**************************************	***** *****	

		SPACE DESC	RIFIION	-	10 00 00
	: 221 1 2				10-02-90
	: ENGG API		CONSUL		6022890201
Carrier Hou	rly Analys:	is Program			Page 1 of 1
*****	****	*****	****	******	******
)	Walls	Roof	Glass		
U-Value :	0.310	0.090	1.060	Building Weight	: M
Weight :	100	L		Glass Factor	: 1.00
Color :		D		Internal Shades	3 N
People : s	gft/person	= 0.0	Schedule	e = 1 Activity	Level = 2
	/sqft		Schedule	= 2 Wattage	Mult. = 1.20
	fixture Type		. Recessed	, not vented	
SPACE NAME	= 221 1	 2			
			1	Floor Area :	154.0 sqft
Exposure	•	NW	SW 1	Roof Area :	154.0 sqft
Wall Area		99.0		Current	_
Glass Area	-	0.0		Elements : Pt,	In
******	****	*****	*****	****	*****
ADDITIONAL	ELEMENT - 1	Partition			
3				nd. Space Temp:Coc	ling = .85.0 F
Area =	- 134.1	) Bdir	onco.	nd. Space Temp:000	ting = 00.0 T $ting = 40.0 T$
U-value =	0.54	D BIU/HE/BC	iche onco	nu. Space Temp: Hea	tcing - 40.0 r
****	*****	*****	*****	*****	*****
	ELEMENT -	Infiltratio	on		
ADDITIONAL					
	: 0.11	CFM/sqft =	1	7 CFM	
Cooling Heating	: 0.11 ( : 0.16 ( : 0.16 (	CFM/sqft =	2	7 CFM 5 CFM	

Space Name: 222 RC-8		FROE DESCRIPTION	10-02-90
Prepared By : ENGG APP		ONSUL	6022890201
Carrier Hourly Analysi	_		Page 1 of 1
*******		****	******
	Roof	Glass	
	0.090	1.060 Building Weig	int : M
	L	Glass Factor	
Color : D	D	Internal Shad	les ? N
People : sqft/person	= 240.0	Schedule = 1 Activ	vity Level = 2
Lights : W/sqft	= 4.00	Schedule = 2 Watta	ige Mult. = 1.20
: Fixture Type	= 1	Recessed, not vented	
SPACE NAME = 222 RC			
SPACE NAME - 222 NO	0 2 2	Floor Area :	240.0 sqft
Exposure :	NW	SW Roof Area :	- ·
Wall Area : 11	4.4	0.0 Current	
	0.0	0.0 Elements :	El.Pt.In
******		*****	
ADDITIONAL ELEMENT - O	ther Electr	ic	
W/sqft =	4.40		
Total Watts =	1,056		
Schedule No. =	3		
***************		******	*****
ADDITIONAL ELEMENT - P	artition		
Area = 240.0	saft	Uncond. Space Temp:	Cooling = 85.0 F
		t/F Uncond. Space Temp:	
*******	*****	*****	******
ADDITIONAL ELEMENT - I	nfiltration		
Cooling : 0.11 C	FM/sqft =	26 CFM	
Heating : 0.16 C			
	FM/sqft =	38 CFM	
-15	,		

Space Name	. 222 D							0-02-9
				CONSIII			_	289020
Prepared By				CONSUL				1 of
Carrier Hous	riy Anai					*******	_	
******	<b></b>				****			
	Walls		Roof	Glass				.,
J-Value :				1.060		ng Weight		
Weight :	100		L			Factor		
Color :	D		D		Interna	al Shades	?	N
People : so	qft/pers	on =	640.0	) Schedu	le = 1	Activity	Level	=
Lights : W	/sqft	=	3.75	Schedu	le = 2	Wattage 1	Mult.	= 1.2
: F	ixture T	ype =	1		d, not ver			
SPACE NAME	= 223	RC-9	1 2					
					Floor Are	ea :	640.	0 sqft
Exposure	:	NW	•	SW	Roof Area	a :	640.	0 sqft
								_
Wall Area	•	247.0		0.0	Current			
Wall Area Glass Area ************************************	: *****	247.0 165.2 ***** - Othe	*****	0.0		: El,I	Pt,In ******	*****
Glass Area *******	: ****** ELEMENT 	165.2 ***** - Othe	*****	0.0		: El,I	Pt,In ******	*****
Glass Area ************************************	: ******** ELEMENT  ts No. 	165.2 ***** - Othe = = *****	******* r Elect 4.40 2,816 3	0.0		: El,I	Pt,In ******  *****	*****
Glass Area ************************************	: ******** ELEMENT  ts No. 	165.2 ***** - Othe = = *****	******* r Elect 4.40 2,816 3	0.0		: El,I	Pt,In ******  *****	*****
Area	: ****** ELEMENT  ts No. ****** ELEMENT	165.2 ***** - Othe = = - ***** - Part	****** r Elect 4.40 2,816 3 ****** ition ft	0.0 ******* cric	Elements ******** *********	**************************************	*******  ****** ling =	*****  *****
Area	: ****** ELEMENT  ts No. ****** ELEMENT	165.2 ***** - Othe = = - ***** - Part	****** r Elect 4.40 2,816 3 ****** ition ft	0.0 ******* cric	Elements ******** *********	*****	*******  ****** ling =	*****  ***** 85.0 40.0
Applitional 1  ************  Additional 1  W/sqft  Total Watt  Schedule 1  *********  Additional 1	: ****** ELEMENT  ts No. ****** ELEMENT	165.2 ***** - Othe = = - ***** - Part	****** r Elect 4.40 2,816 3 ****** ition ft	0.0 ******* cric	Elements ******** *********	**************************************	*******  ****** ling =	*****  ***** 85.0 40.0
Area = U-Value =	ts No.  ******* ELEMENT  *******  64	165.2 ***** - Othe = = ***** - Part 540 BT	****** r Elect 4.40 2,816 3 ition ft U/hr/sq	0.0 ******* ric  ********  Unc	Elements ******** *********	**************************************	*******  ****** ling =	*****  ***** 85.0 40.0
Glass Area  *********  ADDITIONAL  W/sqft  Total Wate Schedule  ********  ADDITIONAL  Area = U-Value =  U-Value =  Cooling	: ****** ELEMENT  ts No. ****** ELEMENT  64 0. ******* ELEMENT : 0.1	165.2 ***** - Othe = = ***** - Part 540 BT 1 CFM/	****** r Elect 4.40 2,816 3 ition ft U/hr/sq ttratic	O.O	Elements ******** *********	**************************************	*******  ****** ling =	***** ***** 85.0 40.0
Glass Area ********* ADDITIONAL   W/sqft Total Wate Schedule   ******** ADDITIONAL   Area = U-Value = *********	: ****** ELEMENT  ts No. ****** ELEMENT  64 0. ******* ELEMENT : 0.1	165.2 ***** - Othe = = ***** - Part 540 BT 1 CFM/	****** r Elect 4.40 2,816 3 ition ft U/hr/sq ttratic	O.O	Elements *********  cond. Space ond. Space	**************************************	*******  ****** ling =	***** ***** 85.0 40.0

Space Name											
										10-02	
Prepared By					CONSUI	_				022890	
Carrier Hou										ige 1 c	of 1
*****	*****	****	*****	****	****	*****	****	******	*****	*****	***
	Wal	ls	Ro		Glas						
U-Value :	0.3	10	0.0	90	1.06	50 B	uildin	g Weigh	t :	M	
Weight :	1	00		L				actor			
Color :	;	D		D		I	nterna	l Shade	s ?	N	
People : s	qft/pe	rson	=	400.0	Sche	edule	= 1	Activi	ty Leve	el =	2
Lights : W	/sqft		=	4.80	Sche	edule	= 2	Wattag	e Mult.	. = 1	20
: F	ixture	Туре	e =	1	l Recei	ssed, n	ot ven	ted			
SPACE NAME	= 22	4 RC	 10	1 2							
								a :	40	0.0 sc	ſft
Exposure	:		NW		1	NE ROO	f Area	:	40	0.0 s	ſft
Vall Area	:	15	55.0							•	
Glass Area			03.0					: E	l,Pt,Pt	.,In	
*****	*****	****	****	****	****	*****	****	*****	*****	*****	***
ADDITIONAL											
W/acf+			 A	 40							
W/sqft	+ a	=	_	 .40 760							
Total Wat		=	1,	760							
		=	1,								
Total Wat Schedule	No. *****	= =  ****	1,	760 3 		****	*****	*****	*****	*****	***
Total Wat Schedule	No. *****	= =  ****	1,	760 3 				*****			***
Total Wat Schedule ************************************	No. ***** ELEMEN	= =  ***** T - I	1, ***** Partit	760 3 *****							
Total Wat Schedule ********* ADDITIONAL Area =	No. ***** ELEMEN	= = ***** T - I	1, ****** Partit	760 3 ***** ion	 J	Jncond.	Space	Temp:C	 ooling	= 85.	0 F
Total Wat Schedule	No. ***** ELEMEN	= = ***** T - I	1, ****** Partit	760 3 ***** ion	 J	Jncond.	Space		 ooling	= 85.	0 F
Total Wat Schedule ******** ADDITIONAL Area =	No. ***** ELEMEN	= +**** T - I 	1, ***** Partit O sqft D BTU/	760 3 ***** ion 	 ξ Aft/F (	Jncond.	Space Space	Temp:C	ooling	= 85. = 40.	0 F
Total Wat Schedule  ********  ADDITIONAL  Area = U-Value =	No. ***** ELEMEN 	= ***** T - I  400.0	1, ***** Partit O sqft D BTU/	760 3 *****ion 	Ift/F (	Jncond. Jncond.	Space Space	Temp:C	 ooling eating 	= 85. = 40.	0 F
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Total Wat Schedule  ********* ADDITIONAL  Area = U-Value =  ********** ADDITIONAL	No. ***** ELEMEN  ***** ELEMEN	# # # # # # # # # # # # # # # # # # #	1,  ***** Partit  D sqft  D BTU/  ***** Partit	760 3 *****ion 	 Ift/F (	Jncond. Jncond.	Space Space *****	Temp:C Temp:H	ooling eating  ******	= 85. = 40. ******	0 F
Total Wat Schedule  ********* ADDITIONAL  Area = U-Value =  ******** ADDITIONAL  Area = U-Value =	***** ELEMEN ***** ELEMEN	****** T - I ***** T - I 167.0 0.330	1,  ***** Partit D sqft D BTU/ Partit D sqft D BTU/ *****	760 3 	ift/F U	Jncond. Jncond. Jncond. Jncond. Jncond.	Space Space ***** Space Space	Temp:C Temp:H ******* Temp:C	ooling eating ****** ooling eating	= 85. = 40. ******* = 85. = 40.	0 F
Total Wat Schedule  ********* ADDITIONAL  Area = U-Value =  *********  ADDITIONAL  Area = U-Value =	***** ELEMEN ***** ELEMEN	****** T - I ***** T - I 167.0 0.330	1,  ***** Partit D sqft D BTU/ Partit D sqft D BTU/ *****	760 3 	ift/F U	Jncond. Jncond. Jncond. Jncond. Jncond.	Space Space ***** Space Space	Temp:C Temp:H ******* Temp:C	ooling eating ****** ooling eating	= 85. = 40. ******* = 85. = 40.	0 F
Total Wat Schedule  ********* ADDITIONAL  Area = U-Value =  U-Value =  U-Value =  U-Value =  Cooling	NO.  ***** ELEMEN  ***** ELEMEN  *****  *****  *****	****** T - I 400.0 0.540 ***** T - I 167.0 0.330 *****	1,  ***** Partit O sqft D BTU/ ***** Partit O sqft D BTU/ CFM/sqft	760 3 *****ion hr/sc ****ion hr/sc ****ion	Ift/F U	Jncond. Jncond. Jncond. Jncond. Jncond.	Space ***** Space Space *****	Temp:C Temp:H ******* Temp:C	ooling eating ****** ooling eating	= 85. = 40. ******* = 85. = 40.	0 F
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10-02-90 Space Name : 102 RC-11 2 1 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* | Walls | Roof | Glass | U-Value : 0.310 | 0.090 | 1.060 | | Weight : 100 | L | | Color : D | D Building Weight : M Glass Factor : 1.00 Internal Shades ? N People : sqft/person = 156.0 Schedule = 1 Activity Level = 2 Lights: W/sqft = 2.05 Schedule = 2 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented SPACE NAME = 102 RC-11 2 1 Floor Area : 156.0 sqft Exposure : NE NE Roof Area : 0.0 sqf
Wall Area : 91.8 0.0 Current
Glass Area : 62.8 0.0 Elements : El,Pt,Pt,In,Gr 0.0 sqft \*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric \_\_\_\_\_ W/sqft = 5.32830 Total Watts = Schedule No. \*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Partition 156.0 sqft Uncond. Space Temp:Cooling = 85.0 F U-Value = 0.240 BTU/hr/sqft/F Uncond. Space Temp:Heating = 40.0 F \_\_\_\_\_ \*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Partition Area = 154.6 sqft Uncond. Space Temp:Cooling = 85.0 F U-Value = 0.330 BTU/hr/sqft/F Uncond. Space Temp:Heating = 65.0 F \*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration Cooling : 0.11 CFM/sqft = 17 CFM Heating : 0.16 CFM/sqft = 25 CFM Typical : 0.16 CFM/sqft = 25 CFM \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Ground 156.0 sqft Slab Floor Area = Perimeter = Ponth 12.0 ft = 0.0 ft \_\_\_\_\_\_ \*\*\*\*\*\*\*\*\*\*

Space Name :												10-02-9
Prepared By						UL						2289020
Carrier Hour	ly Ana	lys:	is Pro	gran	n							2 1 of
*****	****	***			****	****	****	****	****	****	****	*****
)	Wall	ls	Ro	of	Gl							
U-Value :	0.3	LO	0.0	90	1.	060					:	
Weight :	10	00		L			Gla	es Fa	actor		: 1.	.00
Color :				D			Int	erna:	Sha	les	?	N
People : sq	ft/pei	son	=	156.	0 Sc	hedul	e =	1	Acti	rity	Level	=
Lights : W/:	saft.		=	2.0	)5 Sc	hedul	e =	2	Watt	age M	ult.	= 1.2
	xture	Type	<u> </u>		1 Rec	essed	, not	vent	ed	•		
		-32	-									
SPACE NAME	= 101	R	C-11	2 1	1							
SPACE NAME	_ 10.						Floor	Are			156.	.0 sqft
Function			NE									0 sqft
Exposure Wall Area Glass Area	•		21 2				Curre		•		•	
Mail Mea	•		51.0							ם ום	t,In,	2 <b>~</b>
G1888 AFE&	• •••••	,	02.0				TTEWS.					31 
							****					
ADDITIONAL E												
W/ansk		_		32								
W/sqft		=		3.32								
Total Watt	8	=		830								
	8	=										
Total Watt	s o.	=		830 3							****	
Total Watt	8 O. ****	= = 	 *****	830						 ****	 ****	
Total Watt	8 O. ****	= = 	 *****	830						 ****	 *****	 *****
Total Watt Schedule Notation N	B O. ***** LEMEN	= = ****:	 ****** Partit	830 3 ****	 *****	 ****	 ****	****				
Total Watt: Schedule Notation ************** ADDITIONAL E	s ***** LEMEN	=  **** [ - ]	 ****** Partit	830 3 **** ion		**** Unco	 ***** 	****	Temp	 Cool	 ing =	85.0
Total Watt Schedule Notation N	s ***** LEMEN	=  **** [ - ]	 ****** Partit	830 3 **** ion		**** Unco	 ***** 	****	Temp	 Cool	 ing =	85.0
Total Watt. Schedule Note: ********** ADDITIONAL E. Area = U-Value =	8 0. ***** LEMEN?	= **** r - ]	****** Partit	830 3 ****: ion /hr/s	 ***** 	***** Unco	***** ond. S	**** pace	Temp Temp	Cool	ing =	85.0 40.0
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Total Watt: Schedule Note: ********* ADDITIONAL E: Area = U-Value = ********** ADDITIONAL E: Cooling	***** LEMENT	= =	****** Partit 0 sqft 0 BTU, ***** Infilt	830 3 ***** ion /hr/s rati	sqft/F	***** Unco Unco *****	*****  nd. S  nd. S  *****	**** pace pace ****	Temp Temp	Cool	ing =	85.0 40.0
Total Watt: Schedule Note: ********* ADDITIONAL E: Area = U-Value = ********** ADDITIONAL E: Cooling	***** LEMENT	= =	****** Partit 0 sqft 0 BTU, ***** Infilt	830 3 ***** ion /hr/s rati	sqft/F	***** Unco Unco *****	***** nd. S nd. S ***** 7 CFM 5 CFM	**** pace pace	Temp Temp	Cool	ing =	85.0 40.0
Total Watt: Schedule Note: ********** ADDITIONAL E: Area = U-Value = ************ ADDITIONAL E:	***** LEMENT	= =	****** Partit 0 sqft 0 BTU, ***** Infilt	830 3 ***** ion /hr/s rati	sqft/F	***** Unco Unco *****	*****  nd. S  nd. S  *****	**** pace pace	Temp Temp	Cool	ing =	85.0 40.0
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Total Watt. Schedule Note: *************  ADDITIONAL E  Area = U-Value =   ************  ADDITIONAL E  Cooling Heating Typical   ***********************************	*****  LEMENT  *****  LEMENT  *****  CO  *****	= = = = = = = = = = = = = = = = = = =	****** Partit O sqft O BTU, ***** Infilt CFM/sc CFM/sc	830 3 ****: ion /hr/s rat: irat: ift ift	sqft/F  ***** ion = = =	***** Unco Unco *****	***** nd. S nd. S ***** 7 CFM 5 CFM	pace pace pace	Temp Temp	::Cool	ing =	85.0 40.0
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Total Watt. Schedule Note: ************** ADDITIONAL E  Area = U-Value =   ************ ADDITIONAL E  Cooling Heating Typical   ************* ADDITIONAL E	***** LEMENT  : 0. : 0. : 0. : LEMENT	11 (c. 16	***** Partit O sqft O BTU, ***** Infilt CFM/sc CFM/sc CFM/sc CFM/sc	830 3 ****: ion /hr/s :rati	sqft/F	***** Unco Unco *****  1 2 2	***** nd. S nd. S ***** 7 CFM 5 CFM	pace pace pace	Temp Temp	::Cool	ing =	85.0 40.0
Total Watt: Schedule Note: Area = U-Value =  "************ ADDITIONAL E: Cooling Heating Typical	***** LEMENT  : 0. : 0. : 0. : LEMENT	11 (c. 16	***** Partit O sqft O BTU  ***** Infilt CFM/sc CFM/sc CFM/sc CFM/sc CFM/sc	830 3 ****; ion /hr/s rati	sqft/F 	***** Unco Unco *****  1 2 2 *****	***** nd. S nd. S ***** 7 CFM 5 CFM	pace pace pace	Temp Temp	::Cool	ing =	85.0 40.0
Total Watt. Schedule Note: ************** ADDITIONAL E  Area = U-Value =   ************ ADDITIONAL E  Cooling Heating Typical   ************* ADDITIONAL E	***** LEMENT  : 0. : 0. : 0. : LEMENT	11 (c. 16	***** Partit O sqft O BTU, ***** Infilt CFM/sc CFM/sc CFM/sc CFM/sc	830 3 ****; ion /hr/s rati	sqft/F	***** Unco Unco *****  1 2 2 *****	***** nd. S nd. S ***** 7 CFM 5 CFM	pace pace pace	Temp Temp	::Cool	ing =	85.0 40.0

Space Name : Prepared By Carrier Hour	: EN	NGG A	-11 PPLIC sis P	2 1 ATIO rogr	NS C	ONSI	JL		PTION	****	****	60 <b>Pa</b> g	10-02-9 2289020 e 1 of
U-Value : Weight : Color :	0.	alls .310 100 D		Roof .090 L D		Gla		G)	ildin lass F nterna	actor		: : 1 ?	.00
People : sq Lights : W/ : Fi	ft/g sqft xtur	erson	n = = pe =	15 1	6.0 .88 1	Sch Sch Rece	nedu] nedu] essec	.e .e l, no	= 1 = 2 ot ven	Acti Watt ted	vity age 1	Level	= 1.2
SPACE NAME  Exposure  Wall Area  Glass Area  *************  ADDITIONAL E	:	****		***	***	75 ****	).4 5.8	Rooi Curi Elen		:	El,I	0 Pt,In,	
W/sqft Total Watt Schedule N	lo. ***			****	3  ****	***	***	***	****	****	****		*****
ADDITIONAL E Area = U-Value =	LEME	156	.0 sq	 ft									85.0 40.0
*************ADDITIONAL E							****	****	****	****	****	****	*****
Cooling Heating Typical	:	0.16 0.16	CFM/	вqft вqft 	= = 		2	7 CF 5 CF 5 CF	M' M'				
ADDITIONAL E					***	****	****	****	****	****	*****		*****
Slab Floor Perimeter Depth	Are	ea	=		3	6.0 2.0 0.0							

Space Name :				_							4 .	ヘーヘコーロ
											_	0-02-9
Prepared By						υL						289020
Carrier Hour	cly A	nalys	sis Pr	ogran	n					P	age	1 of
*****	****	****	****	****	****	****	****	****	*****	****	***	****
•	Wa:	lls	R	oof	Gla	<b>188</b>						
U-Value :	0.3	310	0.	090	1.0	060				it:		
Weight :		100		L			Gla	BB Fa	actor	:	1.	00
Color :				D			Inte	ernal	Shade	es ?		N
People : sq	rft/pe	erson	ı =	144.	0 Sc!	hedul	e =	1	Activi	ty Lev	el	#
Lights : W	/saft		=	4.4	4 Sc	hedul	e =	2	Wattac	e Mult		= 1.2
Lights : W/	xture	e Tvt	e =		1 Rec	essed	, not	vent	ed			
SPACE NAME	= 10	)5 F	2C-11	2 1	1							
OTHOD WILL	-				_		Floor	Area		1	44.	0 saft
Exposure	•		SE									0 sqft
Exposure Wall Area Glass Area	•		05 1		,	ת מכו	Curre	n+	:		•	
Mail Vies	•		50.E							l,Pt,I	n G	~
G1888 WL69 *********	•				, 						+++	- 
ADDITIONAL E					ctric							
				 5.76								
W/sqft												
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Schedule N	10.	=		3								
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Schedule N	****	 ****		****	****	 ****	****	 ****	*****	****	***	 *****
Schedule N	****	 ****		****	****	****	****	****	*****	*****	***	*****
Schedule N ************************************	ELEMEI	 ***** NT -	Parti	***** tion								
Schedule N *********** ADDITIONAL E Area =	*****	***** NT - 144.	Parti 0 sqf	***** tion		Unco	nd. S	 pace	Temp: C	cooling		85.0
Schedule N ************************************	*****	***** NT - 144.	Parti 0 sqf	***** tion		Unco	nd. S	 pace	Temp: C			85.0
Schedule N ********* ADDITIONAL E Area = U-Value =	ELEMEI	***** NT - 144. 0.24	Parti 0 sqf	***** tion  t /hr/s	eqft/F	Unco:	nd. S	pace	Temp:C	cooling	= = =	85.0 40.0
Schedule N ********** ADDITIONAL E	CLEMEI	***** NT - 144. 0.24	Parti 0 sqf	***** tion  t /hr/s	aqft/F	Unco:	nd. S	pace	Temp:C	cooling	= = =	85.0 40.0
Schedule N ********* ADDITIONAL E Area = U-Value =	CLEMEI	***** NT - 144. 0.24	Parti 0 sqf	***** tion  t /hr/s	aqft/F	Unco:	nd. S	pace	Temp:C	cooling	= = =	85.0 40.0
Schedule N ********* ADDITIONAL E	CLEMEI	144. 0.24	Parti O sqf O BTU	***** tion  t /hr/s  *****	sqft/F	Unco:	nd. Sind. Si	pace pace ****	Temp:C	cooling	= = =	85.0 40.0
Schedule N ********* ADDITIONAL E	***** CLEMEN	144. 0.24	Parti O sqf O BTU ***** Infil CFM/s	***** tion t /hr/s **** trati	sqft/F	Unco Unco	nd. Sind. Sind. Sind. Sind.	pace pace ****	Temp:C	cooling	= = =	85.0 40.0
Schedule N ********* ADDITIONAL E	***** CLEMEN	144. 0.24	Parti O sqf O BTU ***** Infil CFM/s	***** tion t /hr/s **** trati	sqft/F	Unco Unco *****	nd. Sind. Si	pace pace ****	Temp:C	cooling	= = =	85.0 40.0
Schedule N ********* ADDITIONAL E	***** CLEMEN	144. 0.24	Parti O sqf O BTU ***** Infil CFM/s	***** tion t /hr/s **** trati	sqft/F	Unco Unco *****	nd. Sind. Sind. Sind. Sind.	pace pace ****	Temp:C	cooling	= = =	85.0 40.0
Schedule N  *********  ADDITIONAL E  Area = U-Value =  ********  ADDITIONAL E  Cooling Heating Typical	CLEMEN CL	****** 144. 0.24 ***** NT -	Parti O sqf O BTU  ***** Infil CFM/s CFM/s	***** tion /hr/s **** trati	aqft/F	Unco:	nd. Sind. Si	pace pace ****	Temp: C	Cooling Seating	***	85.0 40.0 *****
Schedule N ********** ADDITIONAL E  Area = U-Value =  *********  ADDITIONAL E  Cooling Heating Typical  ***********************************	***** ELEMEN	144. 0.24 ***** NT - 0.11 0.16 0.16	Parti O sqf O BTU CFM/s CFM/s CFM/s	***** tion t /hr/s **** trati	aqft/F	Unco:	nd. Sind. Si	pace pace ****	Temp: C	Cooling Seating	***	85.0 40.0 *****
Schedule N  *********  ADDITIONAL E  Area = U-Value =  ********  ADDITIONAL E  Cooling Heating Typical	***** ELEMEN	144. 0.24 ***** NT - 0.11 0.16 0.16	Parti O sqf O BTU CFM/s CFM/s CFM/s	***** tion t /hr/s **** trati	aqft/F	Unco:	nd. Sind. Si	pace pace ****	Temp: C	Cooling Seating	***	85.0 40.0 *****
Schedule N ********** ADDITIONAL E	***** ELEMEN  : ((	144. 0.24 ***** NT - 0.11 0.16 0.16	Parti O sqf O BTU  ***** Infil CFM/s CFM/s CFM/s Groun	***** tion t /hr/s **** trati	aqft/F	Unco Unco *****	nd. S; **** 6 CFM 3 CFM 3 CFM	pace pace ****	Temp: C	Cooling Seating	***	85.0 40.0 *****
Schedule N ********** ADDITIONAL E  Area = U-Value =  ********* ADDITIONAL E  Cooling Heating Typical  ********** ADDITIONAL E	***** ELEMEN  : ((	144. 0.24 ***** NT - 0.11 0.16 0.16	Parti O sqf O BTU  ***** Infil CFM/s CFM/s CFM/s CFM/s	***** tion t /hr/s **** trati	aqft/F	Unco Unco ***** 1 2 2	nd. S; **** 6 CFM 3 CFM 3 CFM	pace pace ****	Temp: C	Cooling Seating	***	85.0 40.0 *****
Schedule N ********** ADDITIONAL E	***** ELEMEN  : ((	144. 0.24 ***** NT - 0.11 0.16 0.16	Parti O sqf O BTU  ***** Infil CFM/s CFM/s CFM/s Groun	***** tion t /hr/s **** trati	aqft/F	Unco Unco ***** 1 2 2 *****	nd. S; **** 6 CFM 3 CFM 3 CFM	pace pace ****	Temp: C	Cooling Seating	***	85.0 40.0 *****

	106 RC-	11 2 1 (1	07,9,10	')				0-02-90 2890201
Prepared By Carrier Hour				UL				1 of 1
Carrier Hour  ******	try Anary	818 Progr	*****	*****	****	*****	*****	*****
U-Value :	Walls	Roof 0.090	Gl			ng Weight		
Weight :	100	L			Glass 1	Factor	: 1.	00
Color :	D	D			Intern	al Shades	?	N
People : so	ift/perso	n = 14	4.0 Sc	hedule	= 1	Activit	y Level	= 2
Lights : W/	sqft exture Ty	= 4 pe =	.44 Sc 1 Rec	essed,	= 2 not ve	nted	Mult.	= 1.20
SPACE NAME	= 106 R	C-11 2 1	(107,9,	10)			144	0 sqft
Exposure	•	SE		SE R	cof Are	ea :		0 sqft
Wall Area		86.0			urrent		•	0 04-0
Glass Area	-	62.2					l,Pt,In,G	r
******	-						******	
ADDITIONAL E	ELEMENT -	Other El						
W/sqft	=							
W/sqft Total Watt Schedule N	:s =	83						
Total Watt	:8 = Vo. =	83  ******	0 3 	****	*****	*****		 *****
Total Watt	= No. = =	83  ******	0 3 ******	Uncon	d. Space	e Temp:Co	 ooling =	85.0 F
Total Watt Schedule N ********** ADDITIONAL E Area = U-Value =	######################################	83 ******* Partitio0 sqft 40 BTU/hr	0 3 ****** n 	Uncon	d. Space	e Temp:Co	ooling =	85.0 F 40.0 F
Total Watt Schedule N ********** ADDITIONAL E	######################################	******* Partitio0 sqft 40 BTU/hr ******* Infiltra	/sqft/F	Uncon Uncon *****	d. Spaced. Spaced. Spaced.	e Temp:Co	ooling =	85.0 F 40.0 F
Total Watt Schedule N ********** ADDITIONAL E Area = U-Value =  ********** ADDITIONAL E  Cooling Heating	######################################	******* Partitio0 sqft 40 BTU/hr ****** Infiltra CFM/sqft CFM/sqft	/sqft/F ****** tion	Uncon Uncon ******	d. Spaced. Spa	e Temp:Co	ooling =	85.0 F
Total Watt Schedule N ********** ADDITIONAL E	######################################	******* Partitio0 sqft 40 BTU/hr ******* Infiltra	/sqft/F ****** tion	Uncon Uncon ******	d. Spaced. Spaced. Spaced.	e Temp:Co	ooling =	85.0 I 40.0 I
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Total Watt Schedule N *********** ADDITIONAL E  Area = U-Value =  ********** ADDITIONAL E  Cooling Heating Typical  *********** ADDITIONAL E	######################################	******* Partitio .0 sqft 40 BTU/hr ******* Infiltra CFM/sqft CFM/sqft CFM/sqft CFM/sqft	/sqft/F ***** tion = ******	Uncon Uncon ******  16 23 23  ******	d. Spaced. Spa	e Temp:Co	coling = eating =	85.0 F 40.0 F

Space Name: 108 RC-11 2 1 10-02-90 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.310 0.090 1.060 Building Weight: M
Weight: 100 L Glass Factor : 1.00
Color: D D Internal Shades? N People : sqft/person = 198.0 Schedule = 1 Activity Level = 2
Lights : W/sqft = 4.85 Schedule = 2 Wattage Mult. = 1.20
: Fixture Type = 1 Recessed, not vented SPACE NAME = 108 RC-11 2 1 Floor Area : 198.0 sqft Exposure : SE SE Roof Area : 0.0 Wall Area : 131.4 0.0 Current Glass Area : 81.2 0.0 Elements : El,Pt,In,Gr 0.0 sqft \*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric W/sqft = 4.40 Total Watts = 871 871 3 Schedule No. \*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Partition 198.0 sqft Uncond. Space Temp: Cooling = 85.0 F U-Value = 0.240 BTU/hr/sqft/F Uncond. Space Temp:Heating = 40.0 F \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration Cooling : 0.11 CFM/sqft = 22 CFM
Heating : 0.16 CFM/sqft = 32 CFM
Typical : 0.16 CFM/sqft = 32 CFM ADDITIONAL ELEMENT - Ground Slab Floor Area = 198.0 sqft 16.5 ft Perimeter = Depth = 0.0 ft

			E DESCRIPTION		
Space Name : 11	12 RC-11	2 1			10-02-9
Prepared By : I	ENGG APPLIC	ATIONS CONS	UL		602289020
Carrier Hourly	Analysis P	rogram			Page 1 of
******			******	*****	*****
,	Walls 1		.ass		
U-Value : (	0.310 0	.090 1.		g Weight	: M
Weight :	100	L	Glass F		: 1.00
Color :	D	D	Interna	l Shades	? N
					_
People : sqft,	/person =	208.0 Sc	chedule = 1	Activity L	evel =
Lights : W/sqi	ft =	3.85 Sc	hedule = 2	Wattage Mu	1t. = 1.2
: Fixtu	re Type =	1 Rec	essed, not ven	ted	
SPACE NAME =	112 RC-11	2 1	Floor 3mo	a :	200 0 saft
	0.0		SW Roof Area	a :	0.0 sqft
Exposure : Wall Area :	5E	1.0	SW ROOI Area		0.0 Bqrc
Wall Area :	130.4	16	0.0 Elements	. 21 24	D+ To C=
Glass Area :	75.8		U.U Elements	: E1,PC	,PC,IN,GE ++++++++
ADDITIONAL ELEM					
ADDITIONAL ELER	MENT - Othe	r Electric			
W/sqft	=	4.40			
Total Watts		915			
Schedule No.	= *****	3 *******	*******	 *******	 ********
Schedule No.	= ********* MENT - Part	3  ********** ition			
Schedule No.  ***************  ADDITIONAL ELEMAN  Area =	= ******** MENT - Part 208.0 sq	3  ********** ition 	Uncond. Space	Temp:Cooli	 ng = 85.0
Schedule No.  ***************  ADDITIONAL ELEMAN  Area =	= ******** MENT - Part 208.0 sq	3  ********** ition 		Temp:Cooli	 ng = 85.0
Schedule No.  *********  ADDITIONAL ELEM  Area =  U-Value =	208.0 sq	3 ********* ition 	Uncond. Space	Temp:Cooli Temp:Heati	ng = 85.0 ng = 40.0
Schedule No.  ********  ADDITIONAL ELEM  Area =  U-Value =	208.0 sq 0.240 BT	3 ********* ition 	Uncond. Space	Temp:Cooli Temp:Heati	ng = 85.0 ng = 40.0
Schedule No.  *************  ADDITIONAL ELEM  Area =  U-Value =  ***********************************	208.0 sq 0.240 BT	3 ********* ition 	Uncond. Space Uncond. Space	Temp:Cooli Temp:Heati	ng = 85.0 ng = 40.0
Schedule No.  *************  ADDITIONAL ELEM  Area = U-Value =  ****************  ADDITIONAL ELEM  Area =	208.0 sq 0.240 BT ************************************	3 ************** ition	Uncond. Space Uncond. Space	Temp:Cooli Temp:Heati ************************************	ng = 85.0 ng = 40.0 *********
Schedule No.  *************  ADDITIONAL ELEM  Area = U-Value =  ****************  ADDITIONAL ELEM  Area =	208.0 sq 0.240 BT ************************************	3 ************** ition	Uncond. Space Uncond. Space	Temp:Cooli Temp:Heati ************************************	ng = 85.0 ng = 40.0 *********
Schedule No.  *************  ADDITIONAL ELEM  Area = U-Value =  ****************  ADDITIONAL ELEM  Area =	208.0 sq 0.240 BT ************************************	3 ************** ition	Uncond. Space Uncond. Space	Temp:Cooli Temp:Heati ************************************	ng = 85.0 ng = 40.0 *********
Schedule No.  ***************  ADDITIONAL ELEM  Area =  U-Value =  ***************  ADDITIONAL ELEM  Area =  U-Value =	208.0 sq 0.240 BT ************************************	3 ********* ition  ft U/hr/sqft/F  ********* ition  ft U/hr/sqft/F	Uncond. Space Uncond. Space	Temp:Cooli Temp:Heati ************************************	ng = 85.0 ng = 40.0 *********
Schedule No.  ***************  ADDITIONAL ELEM  Area = U-Value =  Area = U-Value =  U-Value =  Area = Area	208.0 sq 0.240 BT ********** MENT - Part 208.0 sq 0.360 BT ********	3	Uncond. Space  **********  Uncond. Space  Uncond. Space  Uncond. Space	Temp:Cooli Temp:Heati  *********  Temp:Cooli Temp:Heati	ng = 85.0 ng = 40.0 *********
Schedule No.  ****************  ADDITIONAL ELEM  Area = U-Value =  ***************  ADDITIONAL ELEM  Area = U-Value =  *****************  ADDITIONAL ELEM  Cooling :	208.0 sq 0.240 BT ********** MENT - Part 208.0 sq 0.360 BT *********	3	Uncond. Space  "********  Uncond. Space  Uncond. Space  Uncond. Space	Temp:Cooli Temp:Heati  *********  Temp:Cooli Temp:Heati	ng = 85.0 ng = 40.0 *********
Schedule No.  ************  ADDITIONAL ELEM  Area = U-Value =  U-Value =  U-Value =  U-Value =  Cooling : Heating :	208.0 sq 0.240 BT ********** MENT - Part 208.0 sq 0.360 BT ********* MENT - Infi	3	Uncond. Space  White the state of the state	Temp:Cooli Temp:Heati  *********  Temp:Cooli Temp:Heati	ng = 85.0 ng = 40.0 *********
Schedule No.  ****************  ADDITIONAL ELEM  Area = U-Value =  ***************  ADDITIONAL ELEM  Area = U-Value =  *****************  ADDITIONAL ELEM  Cooling :	208.0 sq 0.240 BT *********** MENT - Part 208.0 sq 0.360 BT ********** MENT - Infi	3	Uncond. Space  White the state of the state	Temp:Cooli Temp:Heati  *********  Temp:Cooli Temp:Heati	ng = 85.0 ng = 40.0 *********
Schedule No.  **************  ADDITIONAL ELEM  Area = U-Value =  U-Value =  U-Value =  Cooling : Heating : Typical :	208.0 sq 0.240 BT *********** MENT - Part 208.0 sq 0.360 BT ********* MENT - Infi 0.11 CFM/ 0.16 CFM/	3	Uncond. Space	Temp:Cooli Temp:Heati *********  Temp:Cooli Temp:Heati ********	ng = 85.0 ng = 40.0 ***********************************
Schedule No.  **************  ADDITIONAL ELEM  Area = U-Value =  U-Value =  U-Value =  Cooling : Heating : Typical :  ***********************************	208.0 sq 0.240 BT 208.0 sq 0.240 BT 208.0 sq 0.360 BT 208.0 sq 0.360 BT 208.0 sq 0.360 CFM/0.16 CFM/0.	3	Uncond. Space Un	Temp:Cooli Temp:Heati *********  Temp:Cooli Temp:Heati ************************************	ng = 85.0 ng = 40.0 ***********************************
Schedule No.  ****************  ADDITIONAL ELEMANT ELE	208.0 sq 0.240 BT ************************************	3 ********* ition	Uncond. Space Un	Temp:Cooli Temp:Heati *********  Temp:Cooli Temp:Heati ************************************	ng = 85.0 ng = 40.0 ***********************************
Schedule No.  *******************  ADDITIONAL ELEM  Area = U-Value =   *****************  ADDITIONAL ELEM  Area = U-Value =   ******************  ADDITIONAL ELEM  Cooling : Heating : Typical :   **********************************	208.0 sq 0.240 BT 208.0 sq 0.240 BT 208.0 sq 0.360 BT 208.0 sq 0.360 BT 4************************************	3 ********* ition	Uncond. Space Un	Temp:Cooli Temp:Heati *********  Temp:Cooli Temp:Heati ************************************	ng = 85.0 ng = 40.0 ***********************************
Schedule No.  *****************  ADDITIONAL ELEMANT EL	208.0 sq 0.240 BT ********** MENT - Part 208.0 sq 0.360 BT ********* MENT - Infi 0.11 CFM/ 0.16 CFM/ 0.16 CFM/	3 ********* ition	Uncond. Space Un	Temp:Cooli Temp:Heati *********  Temp:Cooli Temp:Heati ************************************	ng = 85.0 ng = 40.0 ***********************************

10-02-90 Space Name: 100 CORR RET 2 1 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Carrier Hourly Analysis Program Page 1 of 1 \*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.310 0.090 1.060 Building Weight: M
Weight: 100 L Glass Factor : 1.00
Color: D D Internal Shades ? M Glass Factor : 1.00 Internal Shades ? N People : sqft/person = 0.0 Schedule = 1 Activity Level = 2 Lights : W/sqft = 1.65 Schedule = 2 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented \_\_\_\_\_ SPACE NAME = 100 CORR RET 2 1 Floor Area : 1,548.0 sqft SW Roof Area : Exposure : SE SW Roof Area : 0.0 Wall Area : 0.0 Current Glass Area : 0.0 0.0 Elements : Pt,Pt,In,Gr 0.0 sqft \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Partition Area = 258.0 sqft Uncond. Space Temp:Cooling = 85.0 F U-Value = 0.330 BTU/hr/sqft/F Uncond. Space Temp:Heating = 40.0 F \_\_\_\_\_ \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Partition Area = 1,548.0 sqft Uncond. Space Temp:Cooling = 85.0 F U-Value = 0.240 BTU/hr/sqft/F Uncond. Space Temp:Heating = 40.0 F \_\_\_\_\_\_ \*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration Cooling : 0.11 CFM/sqft = 170 CFM Heating : 0.16 CFM/sqft = 248 CFM Typical : 0.16 CFM/sqft = 248 CFM \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Ground Slab Floor Area = 1,548.0 sqft Perimeter = 0.0 ft = 0.0 ft Depth

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	3 RC-1							-	
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					_				
0.	.310	0.09	<b>∌</b> 0	1.06	0	Buildin	g Weight	:	M
	100	1	Ĺ					: т	.00
	D	1	כ			Interna	l Shades	?	N
6+/_			156 0	C-b-		_ 1	3 at i i t .		=
BQIC/P	PELBOIL	<u>-</u> -	120.0	Sche	dule	- 1	Wattaca	W1+	_ 1 ′
W/BQIT	: _	=					_	Mult.	- 1.4
Fixtur	e Type	· =	1	Keces	sea,	not ven	cea		
· = 2	203 RC	:-11	2 2						
_					Fl	oor Are	a :	156	.0 sqft
•		NE		s	W Ro	of Area	:		.0 sqft
				_					•
							• E).	. Pt . Pt . 1	Tn
1 ·									 ******
. ELEME	INT - O	ther I	STECT	ric					
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	*****	****	****	****	****	****	*****	*****	*****
				*****	****	*****	*****	*****	*****
	****** ENT - P			*****	****	*****	*****	*****	*****
	ENT - P	Partit:	ion						
L ELEME	ENT - P	Partit:	ion	 U	ncond	 . Space	Temp:Coc	 oling =	85.0
	ENT - P	Partit:	ion	 U	ncond	 . Space		 oling =	85.0
ELEME = =	156.0 0.330	ertit: sqft BTU/	ion  hr/sq	 U ft/F U	ncond	. Space	Temp:Coo	oling =	85.0 68.0
= = = = = = = = = = = = = = = = = = =	156.0 0.330	Partit:	ion  hr/sq 	 U ft/F U	ncond	. Space	Temp:Coc	oling =	85.0 68.0
= = = = = = = = = = = = = = = = = = =	156.0 0.330	Partit:	ion  hr/sq 	 U ft/F U	ncond	. Space	Temp:Coo	oling =	85.0 68.0
= = = = = = = = = = = = = = = = = = =	156.0 0.330 ******	Partit: Description Output Descr	ion  hr/sq  **** ion	 U ft/F U 	Incond	. Space . Space *****	Temp: Coo	oling = ating = ******	85.0 68.0 *****
ELEME	156.0 0.330 ******* ENT - P	Partit: Description Output Description Des	ion  hr/sq  **** ion	 U ft/F U  *****	incond incond incond *****	. Space . Space ******	Temp:Coo	oling = ating = *******	85.0 68.0 *****
	sqft/p W/sqft Fixtur = 2	walls 0.310 100 D sqft/person W/sqft Fixture Type 2 = 203 RC : 96 : 66 :********************************	######################################	Purly Analysis Program  *******************  Walls Roof  0.310 0.090  100 L  D D  sqft/person = 156.0  W/sqft = 2.05  Fixture Type = 1  2 = 203 RC-11 2 2  : NE : 91.8 : 62.8  ***********************************	Purly Analysis Program  ***********************************	Walls Roof Glass 0.310 0.090 1.060 100 L D D  sqft/person = 156.0 Schedule W/sqft = 2.05 Schedule Fixture Type = 1 Recessed,  E = 203 RC-11 2 2  F1 : NE SW Ro : 91.8 0.0 Cu 1: 62.8 0.0 El  ***********************************	Walls Roof Glass  0.310 0.090 1.060 Buildin  100 L Glass F  D D Interna  sqft/person = 156.0 Schedule = 1  W/sqft = 2.05 Schedule = 2  Fixture Type = 1 Recessed, not ven  2 = 203 RC-11 2 2  Floor Are  : NE SW Roof Area  : 91.8 0.0 Current  a: 62.8 0.0 Elements  ***********************************	Walls Roof Glass  0.310 0.090 1.060 Building Weight  100 L Glass Factor  D D Internal Shades  sqft/person = 156.0 Schedule = 1 Activity W/sqft = 2.05 Schedule = 2 Wattage Fixture Type = 1 Recessed, not vented  2 = 203 RC-11 2 2  Floor Area :  NE SW Roof Area :  1 91.8 0.0 Current  2 62.8 0.0 Elements : Element = El	Page   Page

Prepared By : Carrier Hourly	04 RC-11 2 2 ENGG APPLICATIONS Analysis Program		10-02-90 6022890201 Page 1 of 1
U-Value : Weight : Color :	Walls Roof 0.310 0.090 100 L D D	Glass 1.060 Building Weight Glass Factor Internal Shades	: M : 1.00 ? N
Lights : W/sq	/person = 412.	O Schedule = 1 Activity  Compared to the school of the sch	y Level = 2 Mult. = 1.20
Exposure : Wall Area : Glass Area :	222.7 138.1	Floor Area : SE Roof Area : 134.1 Current 78.5 Elements : El	
W/sqft Total Watts Schedule No.	= 1,813		
**************************************	**************************************	*******	******
Area = U-Value =	412.0 sqft 0.540 BTU/hr/s	Uncond. Space Temp:Cosqft/F Uncond. Space Temp:He	oling = 85.0 F ating = 40.0 F
ADDITIONAL ELE	MENT - Infiltrat	**************************************	******
Heating :	0.11 CFM/sqft 0.16 CFM/sqft 0.16 CFM/sqft	= 66 CFM	

Prepared By	: 205 RC-11 y : ENGG APPI urly Analysis	2 2 (211, CATIONS OF Program	CONSUL		*****	602 Page	0-02-90 2890201 1 of 1
U-Value : Weight : Color :	Walls 0.310 100 D	Roof 0.090 L D	Glass	Building Glass F	y Weight actor L Shades	: 1.	M 00 N
Lights : \	sqft/person W/sqft Fixture Type	= 4.44	Schedul	e = 1 e = 2 , not vent	Wattage M	Level	= 2 = 1.20
Exposure Wall Area Glass Area	: 95	SE .1 .5	SE 1 0.0 ( 0.0 1		: : El,P	144.	0 sqft 0 sqft *****
W/sqft Total Wat Schedule		5.76 830 3					~~~~
************ ADDITIONAL	*********** ELEMENT - Pa	*********	******	*****	******	*****	*****
Area : U-Value :	= 144.0 = 0.540	sqft BTU/hr/sq	Unco:	nd. Space nd. Space	Temp:Cool Temp:Heat	ing = ing =	85.0 F 40.0 F
	**************** ELEMENT - Ir			*****	******		*****
Cooling Heating Typical		M/sqft =	2	6 CFM 3 CFM 3 CFM			

			2 /WAD					10-02-90
Space Name							_	
Prepared By	: ENGG	APPLIC	ATIONS (	CONSUL				2890201
Carrier Hou	rly Ana:	lysis P	rogram				_	2 1 of 1
******	****	*****	*****	*****	*****	*****	*****	*****
	Walls	в 1	Roof	Glass				
U-Value :	0.310	0 0	.090	1.060	Buildi	ng Weight		
Weight :	100	0	L		Glass	Factor	: 1.	.00
Color :	D		D		Intern	al Shades	?	N
People : s	qft/per	son =	144.0	Schedu	le = 1	Activit	y Level	<b>=</b> 2
	/sqft				le = 2	Wattage	Mult.	= 1.20
	ixture 1		1	Recesse	d, not ve	nted		
SPACE NAME	= 206	RC-11	2 2 (TY)	P. 210)				
					Floor Ar	ea :	144.	0 sqft
Exposure	:	SE		SE	Roof Are	a :	144.	0 sqft
								_
Wall Area	:	86.0		0.0	Current			
Wall Area Glass Area ************** ADDITIONAL	: *****	62.2 ****	*****	0.0	Current Elements ******	: El	,Pt,In *****	*****
	: ****** ELEMENT	62.2 ****	*****	0.0		: El	,Pt,In ******	
Glass Area ********* ADDITIONAL W/sqft	: ****** ELEMENT 	62.2 ****** - Othe	******* r Electi	0.0		: El ******	,Pt,In *******	
Glass Area ********* ADDITIONAL W/sqft Total Wat Schedule	* ****** ELEMENT ts No.	62.2 ******  - Othe = = = ******	******* r Electronic 5.76 830 3	0.0		: El	,Pt,In	*****
Glass Area ******** ADDITIONAL: W/sqft Total Wat	******* ELEMENT  ts No.  ****** ELEMENT	62.2 ****** - Othe = = ****** - Part	******* r Electrons 5.76 830 3 *******	0.0 ******* ric 	Elements	******	*****	*****
Glass Area  ********  ADDITIONAL  W/sqft  Total Wat Schedule  ********  ADDITIONAL  Area =	******* ELEMENT  ts No.  ****** ELEMENT	62.2 ******  - Othe = = = ******  - Part 44.0 sq	******* r Electron 5.76 830 3 ition	0.0 ******* ric  *******	Elements *******  ********  ond. Space	********  ********  Temp:Co	******** ******* oling =	
Glass Area ******** ADDITIONAL  W/sqft Total Wat Schedule  ********** ADDITIONAL	******* ELEMENT  ts No.  ****** ELEMENT	62.2 ******  - Othe  = = ******  - Part 44.0 sq	******* r Electron 5.76 830 3 ition	0.0 ******* ric  *******	Elements *******  ********  ond. Space	******	******** ******* oling =	
Glass Area  ********  ADDITIONAL  W/sqft  Total Wat Schedule  ********  ADDITIONAL  Area =	******* ELEMENT  ts No.  ****** ELEMENT	62.2 ******  - Othe  = = ******  - Part 44.0 sq	*******  5.76 830 3  ****** ition  ft U/hr/sq:	0.0 ****** ric ******* Unc	Elements *******  ********  ond. Spacond. Spacond. Spacond.	********  ********  Temp:Co	******** ******* oling = ating =	40.0 F
Glass Area  ********  ADDITIONAL  W/sqft  Total Wat Schedule  ********  ADDITIONAL  Area =	*******  ELEMENT   ts  No.  *******  ELEMENT   14	62.2 *****  - Othe = = - ******  - Part 44.0 sq .540 BT	*******  r Electi 5.76 830 3  ******* ition  ft U/hr/sq: ******	0.0 ****** ric ******* Unc ft/F Unc	Elements *******  ********  ond. Spacond. Spacond. Spacond.	********  ********  e Temp:Co	******** ******* oling = ating =	40.0 F
Glass Area  *********  ADDITIONAL  W/sqft Total Wat Schedule  *********  ADDITIONAL  Area U-Value =  ********  ADDITIONAL  Cooling	****** ELEMENT  ******  ELEMENT  14  0:  ******  ELEMENT	62.2 *****  - Othe  = = ******  - Part  44.0 sq .540 BT  11 CFM/	*******  5.76  830  3  ******  ition  ft  U/hr/sq:	0.0 ****** ric ******* Unc ft/F Unc	Elements *******  ********  ond. Spac ond. Spac	********  ********  e Temp:Co	******** ******* oling = ating =	40.0 F
Glass Area ********* ADDITIONAL  W/sqft Total Wat Schedule  ********* ADDITIONAL  Area = U-Value =  ********* ADDITIONAL	******* ELEMENT  ******  ELEMENT  0:  ******  ELEMENT  0:  0:  0:  0:  0:  0:  0:  0:  0:  0	62.2 *****  - Othe  = = ******  - Part  44.0 sq .540 BT	*******  r Electi 5.76 830 3 ition ft U/hr/sq: ****** ltration sqft = sqft =	0.0 ****** ric ******* Unc ft/F Unc	Elements *******  ond. Spac ond. Spac	********  ********  e Temp:Co	******** ******* oling = ating =	40.0 F

Space Name : 207 RC-11 Prepared By : ENGG APPL Carrier Hourly Analysis	ICATIONS CONSUL Program	10-02-90 6022890201 Page 1 of 1
Walls U-Value: 0.310 Weight: 100 Color: D	Roof Glass 0.090 1.060 Building Weigh L Glass Factor D Internal Shade	: 1.00
People : sqft/person Lights : W/sqft : Fixture Type		ty Level = 2 e Mult. = 1.20
Wall Area : 128	Floor Area : SE SE Roof Area :	192.0 sqft
ADDITIONAL ELEMENT - Ot	**************************************	*****
W/sqft = Total Watts = Schedule No. =	4.40 845 3	
**************************************	**************************************	*****
Area = 192.0 U-Value = 0.540	sqft Uncond. Space Temp:C BTU/hr/sqft/F Uncond. Space Temp:H	ooling = 85.0 F eating = 40.0 F
**************************************	**************************************	*****
Heating : 0.16 CF	M/sqft = 21 CFM M/sqft = 31 CFM M/sqft = 31 CFM	

209 RC-: : ENGG AP: lv Analys		CONSIII		10-02-9
	PLICATIONS	CONCIII.		
lv Analvs.		COMBOL		602289020
	is Program			Page 1 of
	******		*****	*****
	Roof			
0.310	0.090	1.060		
100	L		Glass Factor	: 1.00
D	D		Internal Shades	? N
ft/person	= 204.0	Schedule	= 1 Activity	y Level =
sqft	= 4.70	Schedule	= 2 Wattage	Mult. = 1.2
kture Type	e = 1	Recessed,	not vented	
= 209 R	C-11 2 2			
		Fl	loor Area :	204.0 sqft
:	SE	SE Ro	oof Area :	204.0 sqft
: 13	25.0	0.0 Cu	ırrent	
_ (	R1 2	00 121	ements . Fl	.Pt.In
*****	*********** Other Elect	*****	******	
LEMENT - (	**************************************	*****		
******** LEMENT - ( 	**************************************	*****		
LEMENT - (	**************************************	*****		
1 .	100 D  ft/person sqft sture Typ = 209 R :	100 L D D Et/person = 204.0 eqft = 4.70 eture Type = 1 = 209 RC-11 2 2 : SE : 125.0	100 L D D  Et/person = 204.0 Schedule sqft = 4.70 Schedule sture Type = 1 Recessed,  = 209 RC-11 2 2  F1 : SE SE RC : 125.0 0.0 Cc	100 L Glass Factor D D Internal Shades  Et/person = 204.0 Schedule = 1 Activity  Eqft = 4.70 Schedule = 2 Wattage  Eture Type = 1 Recessed, not vented  = 209 RC-11 2 2  Floor Area :  SE SE Roof Area :

			^				•	1	ハーハっーロ
Space Name :								_	0-02-9 289020
Prepared By									
Carrier Hour	rly Analy	sis Pr	ogram					Page	1 of
********					*****	****	****	****	
,	Walls	R	oof	Glass					
U-Value : Weight :	0.310	0.	090	1.060	Buil	ding We	ight	:	M
Weight :	100		L		Glas	s Facto	r	: 1.	00
Color :	D		D		Inte	rnal Sh	ades	?	N
People : so	ft/perso	on =	144.0	Schedu	le =	1 Act	ivity	Level	=
Lights : W/	/saft	=	4.44	Schedu	ıle =	2 Wat	tage M	ult.	= 1.2
: Fi	ixture Ty	/pe =	:	l Recesse	ed, not	vented	•		
SPACE NAME	= 212	RC-11	2 2						
					Floor	Area	:	144.	0 sqft
Exposure	•	SE		SW	Roof A	rea	:	144.	0 saft
Wall Area	•	97 1		167.5	Curren	t.	•		1
Glass Area				0.0	Elemen	t a	Fl.P	t.Pt.T	n
*********					******	*****	*****	*****	 *****
ADDITIONAL E									
W/sqft	:	=	5.76						
W/sqft Total Watt	:8	= =	5.76 830						
W/sqft	:8	= =	5.76						
W/sqft Total Watt Schedule N	:8 : No. :		5.76 830 3						
W/sqft Total Watt Schedule N	:8 : No. :	= = = 	5.76 830 3						
W/sqft Total Watt Schedule N ******************************	SE SEMENT	= = = 	5.76 830 3		 :*****	 ****	 ****	 ****	****
W/sqft Total Watt Schedule N ************************************	SO STATE OF THE ST	= =  ****** - Parti	5.76 830 3  tion	*****	 :*****	 *****	 *****	****	 *****
W/sqft Total Watt Schedule N ************ ADDITIONAL F	:8 : No. : ******** ELEMENT :	= =  ****** - Parti	5.76 830 3 ***** tion	**************************************	 ******* cond. Sp	 ****** 	 ***** 	***** ing =	*****
W/sqft Total Watt Schedule N	:8 : No. : ******** ELEMENT :	= =  ****** - Parti	5.76 830 3 ***** tion	**************************************	 ******* cond. Sp	 ****** 	 ***** 	***** ing =	*****
W/sqft Total Watt Schedule N ************ ADDITIONAL F Area = U-Value =	:8 :		5.76 830 3 ***** tion 	********* Und Ift/F Und	cond. Sp	****** ace Tem	 ***** p:Cool p:Heat	****** ing =	****** 85.0 40.0
W/sqft Total Watt Schedule N *********** ADDITIONAL E Area = U-Value =	144 0.5	********	5.76 830 3 ***** tion 	********* Und Ift/F Und	cond. Sp	****** ace Tem	 ***** p:Cool p:Heat	****** ing =	****** 85.0 40.0
W/sqft Total Watt Schedule N *********** ADDITIONAL E Area = U-Value =	144 0.5	********	5.76 830 3 ***** tion 	Unc qft/F Unc	cond. Sp	ace Tem	 ***** p:Cool p:Heat 	*****  ing = ing = *****	***** 85.0 40.0
W/sqft Total Watt Schedule N ********** ADDITIONAL E Area = U-Value = ************ ADDITIONAL E	SELEMENT -	******* - Parti 	5.76 830 3 ***** tion  t /hr/so ***** tion	Unc qft/F Unc	cond. Sp	ace Tem	 p:Cool p:Heat 	***** ing = ing = *****	***** 85.0 40.0
W/sqft Total Watt Schedule N ********* ADDITIONAL E Area = U-Value =  ********** ADDITIONAL E	144 0.9	******* - Parti 540 BTU *******	5.76 830 3 ***** tion  t/hr/so ***** tion	Unc qft/F Unc	cond. Sp	ace Tem	 ***** p:Cool p:Heat  *****	*****  ing = ing = ******	***** 85.0 40.0 
W/sqft Total Watt Schedule N ********** ADDITIONAL E Area = U-Value =  *********** ADDITIONAL E	144 0.9	******* - Parti 540 BTU *******	5.76 830 3 ***** tion  t/hr/so ***** tion	Unc qft/F Unc	cond. Sp	ace Tem	 ***** p:Cool p:Heat  *****	*****  ing = ing = ******	***** 85.0 40.0 *****
W/sqft Total Watt Schedule N ********** ADDITIONAL E  Area = U-Value =  Area = U-Value =	144 0.9 ELEMENT -	******* - Parti 540 BTU 7.5 sqf	5.76 830 3 ***** tion 	Unc qft/F Unc ************************************	cond. Sp cond. Sp cond. Sp	ace Tem	***** p:Cool p:Heat ***** p:Cool	*****  ing = ing =  *****  ing = ing =	***** 85.0 40.0 *****
W/sqft Total Watt Schedule N *********** ADDITIONAL F  Area = U-Value =  ADDITIONAL F  Area = U-Value =	144 0.! ELEMENT	********	5.76 830 3 ***** tion 	unc qft/F Unc	cond. Sp	******* ace Tem ace Tem ace Tem ace Tem ace Tem	******  p:Cool p:Heat p:Cool p:Heat *****	******  ing = ing = ing = ing =	****** 85.0 40.0  ******
W/sqft Total Watt Schedule N *********** ADDITIONAL E  Area = U-Value =  Area = U-Value =  Area = U-Value =  Area = U-Value =	SELEMENT -		5.76 830 3 ***** tion t/hr/so tion t/hr/so tation	unc qft/F Unc ************************************	cond. Sp	******* ace Tem ace Tem ace Tem ace Tem ace Tem	******  p:Cool p:Heat p:Cool p:Heat *****	******  ing = ing = ing = ing =	****** 85.0 40.0  ******
W/sqft Total Watt Schedule N *********** ADDITIONAL E Area = U-Value =  Area = U-Value =  Area = U-Value =  Cooling	144 0.9 ***********************************		5.76 830 3 ***** tion 	unc qft/F Unc ************************************	cond. Sp cond. Sp cond. Sp cond. Sp cond. Sp	******* ace Tem ace Tem ace Tem ace Tem ace Tem	******  p:Cool p:Heat p:Cool p:Heat *****	******  ing = ing = ing = ing =	***** 85.0 40.0  ******
W/sqft Total Watt Schedule N *********** ADDITIONAL E  Area = U-Value =  Area = U-Value =  Area = U-Value =  Area = U-Value =	144 0.9 ***********************************		5.76 830 3 ***** tion ***** tion t /hr/sc **** tratic	unc qft/F Unc ************************************	cond. Sp cond. Sp cond. Sp cond. Sp cond. Sp	******* ace Tem ace Tem ace Tem ace Tem ace Tem	******  p:Cool p:Heat p:Cool p:Heat *****	******  ing = ing = ing = ing =	****** 85.0 40.0  ******

Prepared By Carrier Hou	rly Analysi ************************************	LICATIONS .s Program ******* Roof 0.090	CONSUL  *******  Glass	Glass F	********* g Weight actor l Shades	602 Page ******	м 00
People : s Lights : W : F	qft/person /sqft ixture Type	= 1.65	Schedul	e = 1 e = 2 , not ven	Wattage	Level	= 2 = 1.20
SPACE NAME				Floor Are		•	_
Exposure	*	SE		Roof Area		1,548.	O BQIT
Wall Area Glass Area		0.0		Current Elements	• D+	D+ Tn	
*****	******	*****		*****	•	•	*****
ADDITIONAL :	ELEMENT - P	artition					
Area = U-Value =	1,548.0	sqft BTU/hr/sq	Unco	nd. Space	Temp:Coc	oling = ating =	85.0 F 40.0 F
**********	********** ELEMENT - P	***************	*****	*****	*****	*****	*****
	400-0	sqft	Unco	nd. Space	Temp:Coc	oling =	85.0 F
Area =				_			45 A E
Area = U-Value =	0.330	BTU/hr/sq	ft/F Unco	nd. Space	Temp:Hea	iting =	05.0 F
U-Value =  *******	0.330 ********** ELEMENT - I	******	******				
U-Value =	0.330 ************ ELEMENT - I	********** nfiltratio	******** n				
U-Value = ********* ADDITIONAL Cooling	0.330 ******** ELEMENT - I : 0.11 C : 0.16 C	********** infiltratio	******** n 	*****			

Space Name .								
phace wame .	: 123 RC-	17 3 1 (1	24-126					10-02-9
Prepared By	: ENGG A	PPLICATIO	NS CONSU	TL .			(	602289020
Carrier Hour	ly Analy	sis Progra	am				P	age 1 of
		*****		*****	*****	*****	*****	******
)	Walls	Roof	Gla	88				
U-Value :	0.310			60 8	anildin	g Weigh	+ •	M
Weight :	100				lace F	actor	•	1.00
Weight : Color :	D	D				l Shade		_
Color :	D	ע		•	ncerna	I Shade	B I	14
People : sq								
Lights : W/	'sqft	= 4.	.57 <b>S</b> ch	edule	= 2	Wattag	e Mult	. = 1.2
: Fi	xture Ty	pe =	1 Rece	essed, r	ot ven	ted	-	
SPACE NAME	= 123 R	C-17 3 1	124-126	,				
					or Are	a :	2:	10.0 sqft
Exposure	:	SE		SW Roc	of Area			0.0 sqft
Wall Area	:	0.0		.0 Cur				
Glass Area	:	0.0	0	.0 Ele	ments	: E	1,Pt,I	n,Gr
******	*****	*****	*****	*****	****	*****	*****	******
ADDITIONAL E	LEMENT -	Other Ele	ectric					
W/eaf+	-	Δ Δ(						
W/sqft	=	••••	)					
Total Watt	.s =	924	) 1					
• -	.s =	924	) 1					
Total Watt	s =	924	) 1 3 	*****	*****	*****	*****	*****
Total Watt Schedule N	######################################	924 ************************************	) 1 3  *******	Uncond.	Space	Temp:C	 ooling	= 85.0
Total Watt Schedule N ************************************	######################################	924 3 ***********************************	) 1 3  *******	Uncond.	Space	Temp:C	 ooling	= 85.0
Total Watt Schedule N ********* ADDITIONAL E Area =	######################################	924 *********** Partition .0 sqft 40 BTU/hr/	sqft/F	Uncond.	Space Space	Temp:C Temp:H	 ooling eating	= 85.0 = 40.0
Total Watt Schedule N ********* ADDITIONAL E Area = U-Value =	######################################	924 ******** Partition .0 sqft 40 BTU/hr/	sqft/F	Uncond.	Space Space	Temp:C Temp:H	 ooling eating	= 85.0 = 40.0
Total Watt Schedule N ******** ADDITIONAL E Area = U-Value =  ************ ADDITIONAL E	**************************************	924 ******* Partition .0 sqft 40 BTU/hr/	/sqft/F	Uncond. Uncond.	Space Space *****	Temp:C Temp:H	 ooling eating	= 85.0 = 40.0
Total Watt Schedule N ******** ADDITIONAL E Area = U-Value =  ********* ADDITIONAL E	######################################	924 ******* Partition .0 sqft 40 BTU/hr/ ******** Infiltrat	/sqft/F	Uncond. Uncond. ******	Space Space *****	Temp:C Temp:H	 ooling eating	= 85.0 = 40.0
Total Watt Schedule N  ********* ADDITIONAL E  Area = U-Value =  ********* ADDITIONAL E  Cooling Heating	######################################	924 ******* Partition .0 sqft 40 BTU/hr/ ****** Infiltrat  CFM/sqft CFM/sqft	/sqft/F 	Uncond. Uncond. *******	Space Space *****	Temp:C Temp:H	 ooling eating	= 85.0 = 40.0
Total Watt Schedule N ******** ADDITIONAL E Area = U-Value =  ********* ADDITIONAL E	######################################	924 ******* Partition .0 sqft 40 BTU/hr/ ******** Infiltrat	/sqft/F 	Uncond. Uncond. ******	Space Space *****	Temp:C Temp:H	 ooling eating	= 85.0 = 40.0
Total Watt Schedule N  ********* ADDITIONAL E  Area = U-Value =  ********* ADDITIONAL E  Cooling Heating	######################################	924 ******** Partition .0 sqft 40 BTU/hr/ ******** Infiltrat CFM/sqft CFM/sqft CFM/sqft	/sqft/F	23 C 34 C 34 C	Space Space ******	Temp:C Temp:H ******	ooling eating	= 85.0 = 40.0 *****
Total Watt Schedule N  *********  ADDITIONAL E  Area = U-Value =  ********  ADDITIONAL E  Cooling Heating Typical  **********  ADDITIONAL E  Slab Floor	######################################	924 ******** Partition .0 sqft 40 BTU/hr/ ******* Infiltrat CFM/sqft CFM/sqft CFM/sqft CFM/sqft CFM/sqft	/sqft/F  ****** ion  =  *******	Uncond. Uncond. *******  23 C 34 C 34 C	Space Space ******	Temp:C Temp:H ******	ooling eating	= 85.0 = 40.0 *****
Total Watt Schedule N  *********  ADDITIONAL E  Area = U-Value =  Cooling Heating Typical  ************  ADDITIONAL E	######################################	924 ******** Partition .0 sqft 40 BTU/hr/ ******* Infiltrat CFM/sqft CFM/sqft CFM/sqft CFM/sqft	/sqft/F	Uncond. Uncond. ******  23 0 34 0 34 0 *******	Space Space ******	Temp:C Temp:H ******	ooling eating	= 85.0 = 40.0 *****

								_	
Space Name	: 127	RC-13	3 1	(128	)			_	0-02-90
Prepared By					SUL				289020
Carrier Hour	rly Ana	alysis	Progr	am				Page	1 of
******	*****	****	****	****	****	****	*****	*****	****
,	Wall		Roof		lass				
U-Value :	0.3	10	0.090	1	.060	Buildi	ing Weight	•	M
Weight :	10		L			Glass	Factor		
Color :	I	)	D			Interr	nal Shades	?	N
						_			
People : so	qft/per	rson	= 42	0.0 S	chedul	e = ]	l Activity	Level	= 1 2
Lights : W	/sqft		= 4	.57 S	chedul	e = 2	wattage	Mult.	= 1.2
: F	ixture	Type	=	1 Re	cessed	, not ve	entea 		
SPACE NAME	= 123	7 RC-	-13 3	1 (1)					
				_ ,_		Floor An	rea :	420.	0 sqft
Exposure	:		SE		SW :	Roof Are	ea :	0.	0 sqft
Wall Area		C	0.0			Current			-
Glass Area		Č	0.0				: El,	Pt.In.G	r
******	•			*****	*****	*****	*****	*****	 *****
ADDITIONAL I			ner El						
W/sqft		=							
Total Watt		=	1,84	8				•	
				_					
Schedule 1	No.	=		3					
Schedule 1									
******	*****	 *****			*****	 ******	******	*****	*****
******	*****	 *****			 *****	******			
ADDITIONAL I	****** ELEMEN	***** T - Pa	artitic	on					
**************************************	***** ELEMEN'	 ***** T - Pa	artitic  sqft	on 	Unco	nd. Spac	ce Temp:Coo	oling =	 85.0
ADDITIONAL I	***** ELEMEN'	 ***** T - Pa	artitic  sqft	on 	Unco	nd. Spac		oling =	 85.0
**************************************	****** ELEMEN	****** T - Pa	sqft BTU/hr	on /sqft/	Unco Unco	nd. Spac	ce Temp:Cocce Temp:Hea	oling =	85.0 40.0
*************  ADDITIONAL I  Area = U-Value =	******	****** T - Pa 420.0 0.240	sqft BTU/hr	/sqft/	Unco Unco	nd. Spac	ce Temp:Cocce Temp:Hea	oling =	85.0 40.0
**********  ADDITIONAL I  Area = U-Value =   ************  ADDITIONAL I	ELEMEN	****** T - Pa 420.0 0.240 *****	sqft BTU/hr	/sqft/	Unco F Unco *****	nd. Space	ce Temp:Cocce Temp:Hea	oling =	85.0 40.0
**********  ADDITIONAL I  Area = U-Value =   **********  ADDITIONAL I	****** ELEMEN' ( ****** ELEMEN'	420.0 0.240 ******	sqft BTU/hr ****** nfiltra	/sqft/:	Unco F Unco *****	nd. Spacend. Spacend. Spacend.	ce Temp:Cocce Temp:Hea	oling =	85.0 40.0
**********  ADDITIONAL I  Area = U-Value =   **********  ADDITIONAL I  Cooling Heating	****** ELEMEN' ****** ELEMEN' : 0	****** 420.0 0.240 ***** T - Ir	artitic sqft BTU/hr ****** nfiltra FM/sqft	/sqft/:	Unco F Unco *****	nd. Space	ce Temp:Cocce Temp:Hea	oling =	85.0 40.0
**********  ADDITIONAL I  Area = U-Value =   ************  ADDITIONAL I	****** ELEMEN' ****** ELEMEN' : 0	****** 420.0 0.240 ***** T - Ir	artitic sqft BTU/hr ****** nfiltra FM/sqft	/sqft/:	Unco F Unco ******	nd. Spacend. Spacend. Spacend.	ce Temp:Cocce Temp:Hea	oling =	85.0 40.0
Area = U-Value = Area ADDITIONAL I	****** ELEMEN'  ***** ELEMEN'  : 0 : 0	****** 420.0 0.240 ***** T - Ir - Ir - Il CE	sqft BTU/hr ****** nfiltra FM/sqft FM/sqft	/sqft/: ***** tion : = : = : =	Unco F Unco ****** 4 6	nd. Space of the s	ce Temp:Cocce Temp:Hea	oling = ating =	85.0 40.0 *****
**********  ADDITIONAL I  Area = U-Value =  ***********  ADDITIONAL I  Cooling Heating Typical	****** ELEMEN' ****** ELEMEN' : 0	******  T - Pa  420.0 0.240  ******  T - Ir  .11 CE .16 CE	sqft BTU/hr ****** nfiltra FM/sqft FM/sqft FM/sqft	/sqft/: ***** tion : = : = : =	Unco F Unco ****** 4 6	nd. Space of the s	ce Temp:Cocce Temp:Hea	oling = ating =	85.0 40.0 *****
**********  ADDITIONAL I  Area = U-Value =  ***********  ADDITIONAL I  Cooling Heating Typical	****** ELEMEN'  *****  : 0 : 0 : 0  *****	******  T - Pa  420.0 0.240  ***** T - Ir  .11 CE .16 CE	sqft BTU/hr ****** nfiltra FM/sqft FM/sqft FM/sqft	/sqft/: ***** tion : = : = : *****	Unco F Unco ****** 4 6 6	nd. Space	ce Temp:Cocce Temp:Hea	oling = ating =	85.0 40.0 *****
**********  ADDITIONAL I  Area = U-Value =   *********  ADDITIONAL I  Cooling Heating Typical   **********  ADDITIONAL I	****** ELEMEN'  *****  : 0  : 0  *****  ELEMEN'	******  T - Pa  420.0 0.240  ***** T - Ir .11 CE .16 CE	sqft BTU/hr ****** filtra FM/sqft FM/sqft	/sqft/: ***** tion : = : : : : : : : : : : : : : : : : : :	Unco F Unco ***** 4 6 6	nd. Space	ce Temp:Cocce Temp:Hea	oling = ating =	85.0 40.0 *****
**********  ADDITIONAL I  Area = U-Value =  *********  ADDITIONAL I  Cooling Heating Typical  ***********  ADDITIONAL I	****** ELEMEN'  *****  : 0  : 0  *****  ELEMEN'	******  T - Pa  420.0 0.240  ***** T - Ir .11 CE .16 CE	sqft BTU/hr ****** filtra FM/sqft FM/sqft	/sqft/: ***** tion : = : = : ****** 420.	Unco F Unco ****** 4 6 6	nd. Space	ce Temp:Cocce Temp:Hea	oling = ating =	85.0 40.0 *****

Space Name: 129 RC-18 3 1 10-02-90 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\* 
 Walls
 Roof
 Glass

 U-Value:
 0.310
 0.090
 1.060

 Weight:
 100
 L

 Color:
 D
 D
 Building Weight : M Glass Factor : 1.00 Internal Shades ? N People : sqft/person = 1066.0 Schedule = 1 Activity Level = 2 Lights : W/sqft = 2.40 Schedule = 2 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented SPACE NAME = 129 RC-18 3 1 Floor Area : 1,066.0 sqft Exposure : SE
Wall Area : 0.0
Glass Area : 0.0 SW Roof Area : 0.0 sqft 0.0 Current 0.0 Elements : El,Pt,In,Gr \*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric W/sqft = 4.40 Total Watts = 4,690 Schedule No. \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Partition 1,066.0 sqft Uncond. Space Temp:Cooling = 85.0 F U-Value = 0.240 BTU/hr/sqft/F Uncond. Space Temp:Heating = 40.0 F \_\_\_\_\_\_ \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration Cooling : 0.11 CFM/sqft = 117 CFM Heating : 0.16 CFM/sqft = 171 CFM Typical : 0.16 CFM/sqft = 171 CFM ADDITIONAL ELEMENT - Ground Slab Floor Area = 1,066.0 sqft 0.0 ft Perimeter = = 0.0 ft Depth

SIMPLE SPACE DESCRIPTION	10-02-90
Space Name: 225 RC-23 3 2 (TYP 227)	
Prepared By : ENGG APPLICATIONS CONSUL	6022890201
Carrier Hourly Analysis Program	Page 1 of 1
****************	*****
Walls Roof Glass	
U-Value: 0.310 0.090 1.060 Building Weight	
Weight: 100 L Glass Factor	: 1.00
Color : D D Internal Shades	? N
People : sqft/person = 410.0 Schedule = 1 Activity I	Level = 2
Lights: W/sqft = 4.70 Schedule = 2 Wattage Mu	
: Fixture Type = 1 Recessed, not vented	
SPACE NAME = 225 RC-23 3 2 (TYP 227)	
	410.0 sqft
	410.0 sqft
Wall Area : 0.0 0.0 Current	
Glass Area : 0.0 0.0 Elements : El,Pt	. Tn
************************	****
ADDITIONAL ELEMENT - Other Electric	
ADVIITORAL EDEMINI OCHEL BICCCIIC	
W/sqft = 4.40	
Total Watts = 1,804	
Schedule No. = 3	
DOMEGRATE NO	
******	*****
ADDITIONAL ELEMENT - Partition	
ADDITIONAL EDERMIT - LEICICION	
Area = 410.0 sqft Uncond. Space Temp:Cooli	$n\alpha = 85.0 F$
U-Value = 0.240 BTU/hr/sqft/F Uncond. Space Temp:Heati	
0-Value - 0.240 Bio/mi/aqic/i oncond. Dpace icmp.meaci	.ng = 40.0 1
*************	*******
	*****
ADDITIONAL ELEMENT - Infiltration	
ADDITIONAL ELEMENT - Infiltration	
ADDITIONAL ELEMENT - Infiltration  Cooling : 0.11 CFM/sqft = 45 CFM	
ADDITIONAL ELEMENT - Infiltration	·*******

	. 226	PC-24		2		SCRIPTION	•	1	0-02-90
Space Name : Prepared By					CONSUL.			602	2890201
Carrier House								Page	1 of 1
D*****	*****	*****	****	***	*****	*****	*****		
	Wal		Roo		Glass				
U-Value :				_	1.060	Buildir	ng Weight	:	M
Weight :	1	00	L		2.000		actor		
Color :		D	D			Intern	al Shades		
	•		_			2		·	
People : so	aft/pe	rson	= 4	10.0	Schedu	le = 1	Activity	Level	= 2
Lights : W	/saft		= -	4.70	Schedu	le = 2	Wattage 1	Mult.	= 1.20
: F:	ixture	Type	=	1	Recesse	d, not ver	nted		
SPACE NAME	= 22	6 RC-	24 3	2					
						Floor Are	ea :	410.	0 sqft
Exposure	:		SE		SW	Roof Area	a :	410.	0 sqft
Wall Area	:	0	.0		0.0	Current			
Glass Area	:	0	.0		0.0	Elements	: E1,1	Pt,In	
*****		*****	****	***				*****	*****
	***								
		T - Ot	her E	lect:	ric				
ADDITIONAL 1	ELEMEN				ric				
ADDITIONAL 1	ELEMEN	=	4.	40	ric			<b>-</b>	
ADDITIONAL 1	ELEMEN 	= = =		40 04	ric				
ADDITIONAL 1	ELEMEN 	= = =	4.	40	ric				
W/sqft Total Wate	ELEMEN  ts No.	= = = =	4. 1,8	40 04 3					
W/sqft Total Wate	ELEMEN ts No.	 = = = 	4. 1,8	40 04 3 ****			*****		****
W/sqft Total Wate	ELEMEN ts No.	 = = = 	4. 1,8	40 04 3 ****			******	*****	****
W/sqft Total Wate Schedule 1	ELEMEN ts No. ***** ELEMEN	= = = = *****	4. 1,8	40 04 3 ****	*****	*****			
W/sqft Total Wate Schedule   ************ ADDITIONAL   Area =	ELEMEN ts No. *****	= = = = = = = = = = = = = = = = = = =	4. 1,8 ***** rtiti	40 04 3 ****	**************************************	**************************************	Temp:Cool	 ling =	85.0 I
W/sqft Total Wate Schedule   **********	ELEMEN ts No. *****	= = = = = = = = = = = = = = = = = = =	4. 1,8 ***** rtiti	40 04 3 ****	**************************************	**************************************		 ling =	85.0 I
W/sqft Total Wate Schedule   *****************ADDITIONAL   Area =	ELEMEN ts No. *****	= = = = = = = = = = = = = = = = = = =	4. 1,8 ***** rtiti	40 04 3 ****	**************************************	**************************************	Temp:Cool	 ling =	85.0 I
W/sqft Total Wate Schedule   ************ ADDITIONAL   Area = U-Value =	ELEMEN	= = = = = = = = = = = = = = = = = = =	4. 1,8 ***** rtitic 	40 04 3 **** on 	******* Unc	**************************************	Temp:Cool	 ling =	85.0 I
W/sqft Total Watt Schedule   ********** ADDITIONAL   Area = U-Value =  ********** ADDITIONAL	ELEMEN ***** ELEMEN *****	= = = = = = = = = = = = = = = = = = =	4. 1,8 ***** rtiti 	40 04 3 **** on 	********  Unc ft/F Unc	ond. Space	Temp:Cool	 ling =	85.0 I
W/sqft Total Watt Schedule I ********** ADDITIONAL I Area = U-Value =  ********** ADDITIONAL I	ELEMEN ***** ELEMEN ***** ELEMEN *****	= = = = = = = = = = = = = = = = = = =	4. 1,8  **** rtiti sqft BTU/h **** filtr	40 04 3 **** on 	********  Unc ft/F Unc	**************************************	Temp:Cool	 ling =	85.0 I
W/sqft Total Watt Schedule   ********** ADDITIONAL   Area = U-Value =  ********** ADDITIONAL	ELEMEN  ***** ELEMEN  ***** ELEMEN  ***** ELEMEN  : 0	= = = = = = = = = = = = = = = = = = =	4. 1,8  **** rtiti sqft BTU/h **** filtr M/sqf	40 04 3 	******** ft/F Unc	ond. Space	Temp:Cool	 ling =	85.0 :

	: 228 RC-26	3 2			10-02-90
	: ENGG APPI		ONSUL		22890201
	rly Analysis			Pag	ge 1 of 1
*****	******	*****	*****	*****	****
)	Walls	Roof	Glass		
U-Value :	0.310	0.090	1.060 Building	Weight :	M
Weight :	100	L	Glass Fac	etor : 1	1.00
Color :	D	D	Internal	Shades ?	N
People : s	qft/person	= 410.0	Schedule = 1 A	Activity Level	L = 2
Lights : W	/sqft	= 4.70	Schedule = 2 V	Nattage Mult.	= 1.20
: F	ixture Type	= 1	Recessed, not vente	ed	
SPACE NAME	= 228 RC-	26 3 2			
			Floor Area	: 410	0.0 sqft
Exposure	:	SE	SW Roof Area	: 410	0.0 sqft
Wall Area	: 0	.0	0.0 Current		
Glass Area	: 0	.0	0.0 Elements	: El,Pt,In	
*****	*****	*****	*****	*****	****
ADDITIONAL 1	ELEMENT - Ot	her Electr	ic		
W/sqft	=	4.40			
W/sqft Total Wat		4.40 1,804			
	ts =				
Total Wat	ts =	1,804			
Total Wate	ts =	1,804	******		*****
Total Water Schedule	ts = No. = ************ ELEMENT - Pa	1,804 3 **********	**************************************	**************************************	******** *******
Total Water Schedule	ts = No. = ********** ELEMENT - Pa	1,804 3 ********** rtition	Uncond. Space 1	Temp:Cooling =	= 85.0 1 = 40.0 1
Total Water Schedule	ts = No. = ********** ELEMENT - Pa	1,804 3 ********** rtition	Uncond. Space 1	Temp:Cooling =	= 85.0 : = 40.0 :
Total Water Schedule	ts = No. =  *********  ELEMENT - Pa  410.0 0.240	1,804 3 ********** rtition sqft BTU/hr/sqf	Uncond. Space 1	Temp:Cooling =	= 85.0 : = 40.0 :
Total Water Schedule	ts = No. = ********** ELEMENT - Pa 410.0 0.240	1,804 3 ********** rtition sqft BTU/hr/sqf	Uncond. Space 1	Temp:Cooling =	= 85.0 : = 40.0 :
Total Water Schedule   ********** ADDITIONAL   Area = U-Value =  ************ ADDITIONAL	ts = No. =  *********  ELEMENT - Pa  410.0 0.240  ***********  ELEMENT - In	1,804 3 ******** rtition sqft BTU/hr/sqf ********	Uncond. Space ?	Temp:Cooling =	= 85.0 = 40.0
Total Water Schedule	ts = No. =  *********  ELEMENT - Pa  410.0 0.240  **********  ELEMENT - In	1,804 3 ********* rtition sqft BTU/hr/sqf: ******** filtration M/sqft =	t/F Uncond. Space 1	Temp:Cooling =	= 85.0 1 = 40.0 1

Space Name : 229 Prepared By : El Carrier Hourly	NGG APPLICATION	s CONSUL		10-02-90 6022890201 Page 1 of 1
*****	*****	*****	*****	****
····	alls Roof	<b>Glass</b> 1.060	Building Weight	. M
•		1.000	Glass Factor	: 1.00
Weight : Color :			Internal Shades	•
Popula + saft/	noveon = 512	0 Schedule	= 1 Activity	Level = 2
reopie : mqit/) Lights : W/sqf	person = 512 t = 4.	38 Schedule	= 2 Wattage M	ult. = 1.20
: Fixtu:	re Type =			
SPACE NAME = 3	 229 RC-19 3	2		
DINCE NAME -			oor Area :	512.0 sqft
Exposure :	SE	SW Ro	oof Area :	512.0 sqft
Wall Area :	0.0	0.0 Cu	irrent	
Glass Area :	0.0	0.0 E	ements : El,P	t,In
*****	*****	*****	*****	*****
ADDITIONAL ELEM	ENT - Other Ele	ctric		
W/sqft	= 4.40			
Total Watts	= 2,253			
Schedule No.	= 3			
************	************** ENT - Partition		*****	
	512.0 sqft	Uncond	d. Space Temp:Cool	ing = 85.0 F
	512.0 sqft 0.540 BTU/hr/	Uncondesqft/F Uncondesqft/F	i. Space Temp:Cool i. Space Temp:Heat	ing = 85.0 F ing = 40.0 F
Area = U-Value =	512.0 sqft 0.540 BTU/hr/	sqft/F Uncond	d. Space Temp:Cool d. Space Temp:Heat	ing = 85.0 F ing = 40.0 F 
Area = U-Value =	0.540 BTU/hr/	sqft/F Uncond	i. Space Temp:Cool i. Space Temp:Heat	ing = 85.0 F ing = 40.0 F 
Area = U-Value =  ***********************************	0.540 BTU/hr/	sqft/F Uncond ************************************	1. Space Temp:Heat	ing = 85.0 F ing = 40.0 F ************
Area = U-Value =  ***************  ADDITIONAL ELEM  Cooling : Heating :	0.540 BTU/hr/	sqft/F Uncond  **********  ion  = 56 = 82	i. Space Temp:Heat	ing = 85.0 F ing = 40.0 F ********************************

= 4.4	Glass 1.060 Building Weight Glass Factor Internal Shades  O Schedule = 1 Activity Schedule = 2 Wattage	: M : 1.00 ? N y Level = 2
nalysis Program  ****************  lis Roof  310 0.090  100 L  D D  erson = 144.  = 4.4	Glass 1.060 Building Weight Glass Factor Internal Shades  O Schedule = 1 Activity Schedule = 2 Wattage	**************************************
lls Roof 310 0.090 100 L D D erson = 144. = 4.4	Glass 1.060 Building Weight Glass Factor Internal Shades  O Schedule = 1 Activity Schedule = 2 Wattage	: M : 1.00 ? N y Level = 2
310 0.090 100 L D D erson = 144. = 4.4 e Type =	1.060 Building Weight Glass Factor Internal Shades O Schedule = 1 Activity Schedule = 2 Wattage	: 1.00 ? N y Level = 2
D D  erson = 144.  Type =	Glass Factor Internal Shades  O Schedule = 1 Activity Schedule = 2 Wattage	: 1.00 ? N y Level = 2
D D  erson = 144.  Type =	Glass Factor Internal Shades  O Schedule = 1 Activity Schedule = 2 Wattage	? N y Level = 2
D D erson = 144. = 4.4 = Type =	Internal Shades  O Schedule = 1 Activity  Schedule = 2 Wattage	? N y Level = 2
= 4.4 Type =	4 Schedule = 2 Wattage	y Level = 2 Mult. = 1.2
= 4.4 Type =	4 Schedule = 2 Wattage	Mult. = 1.2
Type =	1 Recessed, not vented	
30 PC-20 3 2		
	)	
,	Floor Area :	144.0 saft
S F		144.0 sqft
		2
0.0		.Pt.Tn
NT - Other Elec	:tric 	
= 5.76		
= 830		
= 3		
**************************************	********	******
NI - FELCICION		
144.0 sqft	Uncond. Space Temp:Co	
	= 5.76 = 830 = 3	0.0 0.0 Current 0.0 0.0 Elements : El  ***********************************

Space Name : 231, 232	RC-21 3 2		10-02-90
Prepared By : ENGG APPL			6022890201
Carrier Hourly Analysis	Program		Page 1 of 1
*****		*****	*****
	Roof Glass		
U-Value: 0.310	0.090 1.060	Building Weight	
Weight : 100	L	Glass Factor	: 1.00
Color : D	D	Internal Shades	? N
	_ 222 0	_ 1 Batimitu T	evel = 2
People : sqft/person	= 2.80 Schedule	= 1 Activity L	1+ = 1.20
Lights : W/sqft			10 1.20
: Fixture Type	= 1 Recessed,	not vented	
SPACE NAME = 231, 232	RC-21 3 2		
		loor Area :	228.0 sqft
Exposure :	SE SW R	oof Area :	228.0 sqft
	.0 0.0 C	urrent	
	.0 0.0 E	lements : El,Pt	,Li,In
******	*****	*****	*****
ADDITIONAL ELEMENT - Ot	her Electric		
W/sqft =	4.40		
Total Watts =	1,003		
Schedule No. =	3		
ADDITIONAL ELEMENT - Pa	*************	*****	*****
ADDITIONAL EDEMENT TO			
Area = 228.0	sqft Uncon	d. Space Temp:Cooli	ng = 85.0 F
U-Value = 0.540	BTU/hr/sqft/F Uncon	d. Space Temp:Heati	ng = 40.0 F
**************			
		******	****
ADDITIONAL ELEMENT - Li	gnts		
W/sqft =	0.88 Schedule	No. =	1
Total Watts =	201 Wattage I	Multiplier =	1.00
Fixture Type =	1 (Recessed,		
****	*****	******	*****
ADDITIONAL ELEMENT - In	filtration		
Cooling : 0.11 CF		CFM	
	M/sqft = 36		
Typical : 0.16 CF	M/sqft = 36	CFM	

										0-02-9
Space Name					CONCUT				_	289020
Prepared By					CONSUL					
Carrier Hou	rly Ana	lysi	B Pro	gram						1 of
******	*****	****	****	****	*****	*****	****	*****	****	*****
•	Wall	. 8	Ro	of						
U-Value :	0.31	.0	0.0	90	1.060	Build	ing Weig	ght	•	M
Weight :	10	0		L			Factor			
Color :	I	)	:	D		Inter	nal Shad	les	?	N
People : s	aft/per	son	=	0.0	Schedu	le =	1 Activ	vity Le	evel	=
Lights : W	/saft		=	5.33	Schedu	le =	2 Watta	age Mul	lt.	= 1.2
	ixture					d, not v				
SPACE NAME	= 233	RC-	-22	3 2						
						Floor A				0 sqft
Exposure	:		SE		SW	Roof Ar	ea :		120.	0 sqft
Wall Area	:		0.0		0.0	Current				
Wall Area Glass Area ********** ADDITIONAL :	: *****	****	0.0 ****	****	0.0		s :	El,Pt,	,In ****	****
Glass Area ******** ADDITIONAL: W/sqft Total Wat	: ****** ELEMENT 	****	0.0 **** ther 4	**** Elect  .40 528	0.0	Element	s :	El,Pt,	,In *****	*****
Glass Area ******** ADDITIONAL: W/sqft	: ****** ELEMENT 	( **** - Of	0.0 **** ther 4	***** Elect 	0.0	Element	s :	El,Pt,	,In *****	*****
Glass Area ******** ADDITIONAL: W/sqft Total Wat	: ******** ELEMENT  ts No. 	(	0.0 ***** ther 4	***** Elect  .40 528 3 	0.0	Element	s :	El,Pt,	,In ***** 	*****
Glass Area ******** ADDITIONAL: W/sqft Total Wat Schedule: ********	: ****** ELEMENT   ts No ******	= = = = = = = = = = = = = = = = = = =	0.0 ***** ther 4  **** artit	***** Elect40 528 3 ion	0.0 ******* ric  *******	Element ******* ********	**************************************	******** ******	*****  *****	*****
Glass Area ********* ADDITIONAL  W/sqft Total Wat Schedule  *********** ADDITIONAL	: ****** ELEMENT   ts No ******	= = = = = = = = = = = = = = = = = = =	0.0 ***** ther 4  **** artit	***** Elect40 528 3 ion	0.0 ******* ric  *******	Element	**************************************	******** ******	*****  *****	*****  ***** 85.0 40.0
Glass Area ********* ADDITIONAL  W/sqft Total Wat Schedule  ********* ADDITIONAL  Area	: ****** ELEMENT   ts No ******	= = = = = = = = = = = = = = = = = = =	0.0 ***** ther 4  **** artit	***** Elect40 528 3 ion	0.0 ****** ric ******* Unc	Element ******* ********	******  ******  ce Temp	*******  ******  Cooling: Heating	***** ***** ng = ng =	40.0 
Glass Area ********* ADDITIONAL W/sqft Total Wat Schedule ********* ADDITIONAL Area U-Value =	ts No. ELEMENT	= = = = = = = = = = = = = = = = = = =	0.0 ***** ther 4 ***** artit sqft BTU/	***** Elect40 528 3 **** ion hr/sq	0.0 ****** ric ******* Unc ft/F Unc	Element ******  ********  cond. Spa	******  ******  ce Temp	*******  ******  Cooling: Heating	***** ***** ng = ng =	40.0 
Glass Area  *********  ADDITIONAL  W/sqft Total Wat Schedule  *********  ADDITIONAL  Area = U-Value =  ********  ADDITIONAL  Cooling	ts No.  ****** ELEMENT  *****  ELEMENT  *****  *****  *****  *****  *****  ****	= = = = = = = = = = = = = = = = = = =	0.0  ****  ther  4  ****  artit  sqft  BTU/  ***  nfilt	***** Elect40 528 3 **** ion hr/sq ***** ratio	0.0 ****** ric ******* Unc ft/F Unc	Element *******  ********  cond. Spa *******	******  ******  ce Temp	*******  ******  Cooling: Heating	***** ***** ng = ng =	40.0 
Glass Area  *********  ADDITIONAL  W/sqft Total Wat Schedule  *********  ADDITIONAL  Area U-Value =  *********  ADDITIONAL	: ****** ELEMENT ***** ELEMENT ***** ELEMENT ***** **** *****	= = = = = = = = = = = = = = = = = = =	0.0  ****  ther  4  ****  artit  BTU/  ***  nfilt  FM/sq  FM/sq	***** Elect40 528 3 **** ion hr/sq ***** ratio	0.0 ****** ric ******* Unc ft/F Unc *******	Element *******  ********  cond. Spa *******	******  ******  ce Temp	*******  ******  Cooling: Heating	***** ***** ng = ng =	40.0 

\*\*\*\*\*\*\*\*\*\*\*\*

AIR SYSTEM DESCRIPTION 07-25-91 Name: AHU-1 BLDG. 307 6100190202 Carrier Hourly Analysis Program Prepared By : E A C, PC BURKE, VA. Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\*\*\*\* 1. SYSTEM NAME AND TYPE System Name = AHU-1 BLDG. 307

System Class = Constant Volume

System Type = (CV/RH) Constant Volume w/ Terminal Reheat

Number of Zones = 10 \*\*\*\*\*\*\*\*\*\*\* SPACE SELECTION (see separate printout) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA \_\_\_\_\_\_ Period Cooling Heating Dampers Operation Occupied 75.0 F 68.0 F Unoccupied 75.0 F 68.0 F OPEN OPEN Weekday : Occupied Period Begins at 0 ; Duration = 24 hrs Saturday : Occupied Period Begins at 0 ; Duration = 24 hrs Sunday : Occupied Period Begins at 0 ; Duration = 24 hrs Design Day : Occupied Period Begins at 0 ; Duration = 24 hrs \*\*\*\*\*\*\*\*\*\*\*\*\* 4. SUPPLY, VENTILATION, RETURN AIR DATA SUPPLY AIR = 9780.00 CFM Supply air flow rate Supply temperature control = 1 Constant VENTILATION AIR Nominal ventilation flow rate = 5500.00 CFM Minimum ventilation flow rate = 5500.00 CFM 5 % of vent air = Damper leak rate RETURN AIR Zone exhaust air flow rate = 5500.00 CFM Zone exhaust fan power = 0.0 kWIs a return plenum used ? N

Name: AHU-1 BLDG. 307 07-25-91 6100190202 Carrier Hourly Analysis Program Prepared By : E A C, PC BURKE, VA. Page 2 of 2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN = 2:Forward curved Type = 2.25 in wg Static Efficiency = 65 % Configuration = 1 Draw-thru RETURN FAN = 2:Forward curved Type Static Efficiency Type = 0.63 in wg = 65 % \*\*\*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL Setpoint temperature = 68.0 F OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL Upper RH setpoint = 100 % Lower RH setpoint = 40 % \*\*\*\*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050

Type of supplemental heating = 2 Skin Heating Units SKIN HEATING UNITS Heat source 1 Baseboard Heaters Skin heating trip temperature = 65.0 F

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

AIR SYSTEM DESCRIPTION 10-16-90 Name: AHU-2 BLDG. 307 Carrier Hourly Analysis Program 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\*\*\* 1. SYSTEM NAME AND TYPE System Name = AHU-2 BLDG. 307

System Class = Constant Volume

System Type = (CV/RH) Constant Volume w/ Terminal Reheat

Number of Zones = 1 \*\*\*\*\*\*\*\* SPACE SELECTION (see separate printout) \*\*\*\*\*\*\*\*\*\*\* 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA OperationThermostat SetpointsVentilationPeriodCoolingHeatingDampers Thermostat Setpoints 
 Occupied
 75.0 F
 68.0 F
 OPEN

 Unoccupied
 75.0 F
 68.0 F
 OPEN
 \_\_\_\_\_\_ Weekday : Occupied Period Begins at 0 ; Duration = 24 hrs
Saturday : Occupied Period Begins at 0 ; Duration = 24 hrs
Sunday : Occupied Period Begins at 0 ; Duration = 24 hrs
Design Day : Occupied Period Begins at 0 ; Duration = 24 hrs \*\*\*\*\*\*\*\*\*\*\*\*\* 4. SUPPLY, VENTILATION, RETURN AIR DATA SUPPLY AIR = 8490.00 CFM Supply air flow rate = Supply temperature control = 1 Constant

Supply air flow rate = 8490.00 CFM
Supply temperature control = 1 Constant

VENTILATION AIR

Nominal ventilation flow rate = 770.00 CFM
Minimum ventilation flow rate = 770.00 CFM
Damper leak rate = 5 % of vent air

RETURN AIR

Zone exhaust air flow rate = 770.00 CFM
Zone exhaust fan power = 0.0 kW
Is a return plenum used ? N

\*\*\*\*\*\*\*\*\*\*\*\*

Name: AHU-2 BLDG. 307 10-16-90 Carrier Hourly Analysis Program 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 2 of 2 \*\*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN Type 2:Forward curved Static = 2.50 in wg Efficiency 65 **%** Configuration 1 Draw-thru RETURN FAN Type Static Efficiency 2:Forward curved = = 0.75 in wg = 65 % \*\*\*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL (Not used) OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL 100 % Upper RH setpoint Upper kH setpoint = 40 % \*\*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA = 0.050
= 2 Skin Heating Units Cooling coil bypass factor Type of supplemental heating SKIN HEATING UNITS Heat source 1 Baseboard Heaters Skin heating trip temperature = 65.0 F

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

10-16-90 Name: AHU-3 BLDG. 307 6022890201 Carrier Hourly Analysis Program Page 1 of 2 Prepared By : ENGG APPLICATIONS CONSUL

1. SYSTEM NAME AND TYPE

System Name = AHU-3 BLDG. 307 System Class = Constant Volume

System Class = Constant Volume
System Type = (CV/RH) Constant Volume w/ Terminal Reheat
Number of Zones = 10

\*\*\*\*\*\*\*\*\*\*\*

SPACE SELECTION (see separate printout)

\*\*\*\*\*\*\*\*\*\*\*\*

#### 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA \_\_\_\_\_\_

Operation Period			Therr Cooli	mostat ng	_	ooints Heating	3	Ventila Dampe			
Occupied Unoccupied			75.0 75.0	-		68.0 F			OP1		
Weekday Saturday Sunday Design Day	: 000	cupied cupied	Period Period Period Period	Begins Begins	at at	0	;	Duration Duration Duration Duration	=	24 24	hrs hrs hrs hrs

\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# 4. SUPPLY, VENTILATION, RETURN AIR DATA

SUPPLY AIR

9420.00 CFM Supply air flow rate Supply temperature control 1 Constant

VENTILATION AIR

2160.00 CFM Nominal ventilation flow rate = = 2160.00 CFM Minimum ventilation flow rate

5 % of vent air Damper leak rate

RETURN AIR

= 2160.00 CFM Zone exhaust air flow rate Zone exhaust fan power 0.0 kW ? Is a return plenum used N

10-16-90 Name: AHU-3 BLDG. 307 6022890201 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 2 of 2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN Type 2:Forward curved Static = 2.50 in wg 65 % Efficiency == Configuration = 1 Draw-thru RETURN FAN Type Static 2:Forward curved = = 1.00 in wg Efficiency 65 % \*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL (Not used) OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL = 100 % Upper RH setpoint Upper RH setpoint = 100 % Lower RH setpoint = 40 % \*\*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050

Type of supplemental heating = 1 Not Used \*

#### PLANT DESCRIPTIONS

07-25-91 Plant : #2 OIL FIRED BOILER BURKE, VA. 6100190202 Prepared By : E A C, PC Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 1 PLANT NAME AND TYPES = Individual Plants Class = #2 OIL FIRED BOILER Name Cooling Plant Type = Air Cooled Reciprocating Heating Plant Type = Combustion \*\*\*\*\*\*\*\*\*\*\*\* 2 AIR SYSTEM SELECTION Mult Air System Name Air System Name AHU-1 BLDG. 307 1 AHU-3 BLDG. 307 1 AHU-2 BLDG. 307 \*\*\*\*\*\*\*\*\*\*\*\* 3a COOLING PLANT DATA (Air Cooled Reciprocating) = 101.12 Ton Estimated maximum cooling coil load Is an electronic expansion valve used Y = 103.00 Ton Capacity at 95.0 F outdoor air Input power rate at 95.0 F outdoor air = 1.200 kW/Ton ? Is chilled water reset used N = 42.0 F Design leaving water temperature Is hot gas bypass used Y Part load % for minimum unloading step \*\*\*\*\*\*\*\*\*\*\*\* 3b HEATING PLANT DATA (Combustion) Estimated maximum heating coil load = 1579.55 MBH= Fuel Oil Fuel type = 1864.0 MBH Rated plant output Type of heating = Hydronic Is plant efficiency computer generated Seasonal plant efficiency 64 % \*\*\*\*\*\*\*\*\* 4 PUMP SYSTEM DATA Chilled water pumping system head 57.00 ft wg Chilled water pumping system delta T = 10.00 F Hot water pumping system head 40.00 ft wg = 20.00 F Hot water pumping system delta T

\*\*\*\*\*\*\*\*\*\*\*\*

FUEL RATE DATA

Fuel Rate : DOMESTIC FUEL OIL #2 (GENERIC)
Prepared By : ENGG APPLICATIONS CONSUL

01-29-91 6100190202

Carrier Hourly Analysis Program Page 1 of 1

1. FUEL RATE DATA

NAME

Name of rate schedule

= DOMESTIC FUEL OIL #2 (GENERIC)

CURRENCY

Currency name Currency symbol BASIC INFORMATION = MBTU = MBTU

Units of measurement = Gallon

= 138.70000 kBTU/Gallon = 1 Simple = 0.13870 MBTU/Gallon

Flat rate charge

Conversion factor
Type of rate schedule

## BUILDING DESCRIPTION

BUILDING			/14						
Building : BUILDING #307									01-29-91
Prepared By: ENGG APPLIC			UL						6100190202
Carrier Hourly Analysis	Program	Ω							Page 1 of 1
******	*****	****	****	****	***	**	*****	****	*****
1. BUILDING INPUTS								*	
BUILDING NAME					=	BU:	ILDING	#307	
MISCELLANEOUS ELECTRIC									
Maximum power		•			=		0.0	kW	
Power schedule					=		1		
DOMESTIC WATER HEATING									
Is a domestic how water	r syste	em us	ed		?		Y		
Maximum hourly hot wat					=		Y 140.0	gal	
Hot water schedule					=		4		
Average entering water	temper	atur	:e		=		65.0	F	
Average hot water supp	ly temp	perat	ure		=		140.0	F	
Heating plant type					=	2	: Comb	ustic	n
Fuel type						_	: Fuel		
Plant capacity							1864.0		
Is plant efficiency con		gene	rate	ì	?		N 64		
Annual plant efficiency	У				=		64	*	
OTHER INPUTS									
Additional building flo	oor are	ea			=	10	0970.0	sqft	•
Additional building fluitectrical generating	efficie	ency			=	:	100.00	B	
******	*****	****	***	****	***	**1	*****	****	******
2. PLANT SELECTION									
Plant Name	Mul	lt							Mult
#2 OIL FIRED BOILER		L							
******			****	****	***	**:	****	****	*****
3. FUEL & ELECTRIC RATE									
	No.	Nan	ne of	Rate	Sch	edı			Currency
Electric	10		ERIC						MBTU
Natural Gas	7	NAT	URAL	GAS (	GEN	ER.	IC)		MBTU
Fuel Oil	6	DOM	ESTI	FUEI	OI	Li	#2 (GE	NERIC	) MBTU
Propane	9	Emp	ty				•		MBTU
	8	HEA			IL#	6	(GENER	IC)	MBTU
Remote Source Heating Remote Source Cooling	9	Emp	ty	•					MBTU

#### MONTHLY ENERGY COSTS

Building : BUILDING #307

Site : FT. BELVOIR, VIRGINIA

07-25-91 6100190202

Prepared By : E A C, PC BURKE, VA.

Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Page 1 of 1

TABLE 1. HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	Remote Cooling
Jan	89	0	875	0	0	0
Feb	82	0	737	0	0	0
Mar	95	0	598	0	0	0
Apr	99	0	331	0	0	0
May	128	0	215	0	0	0
June	172	0	124	0	0	0
July	220	0	107	0	0	0
Aug	209	0	116	0	0	0
Sept	149	0	177	0	0	0
Oct	108	0	315	0	0	0
Nov	93	0	521	0	0	0
Dec	91	0	791	0	0	0
Tot.	1,535	0	4,907	0	0	0

TABLE 2. NON-HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	
Jan	112	0	10	0	0	
Feb	101	0	9	0	0	
Mar	116	0	11	0	0	
Apr	110	0	10	0	0	
May	115	0	11	0	0	
June	111	0	10	0	0	
July	112	0	10	0	0	
Aug	119	0	11	0	O.	
Sept	104	0	10	0	0	
Oct	119	0	11	0	0	
Nov	110	0	10	0	0	
Dec	109	0	10	0	0	
Tot.	1,337	0	126	0	0	
Tot.	1,337	0	126	0	0	

Building: BUILDING #307

Site : FT. BELVOIR, VIRGINIA

6100190202

07-25-91

Prepared By : E A C, PC BURKE, VA.

arrier Hourly Analysis Program Page 1 of 1

TABLE 1. MONTHLY COMPONENT CHARGES (MBTU)

	Energy	Fixed		Total
Month	Charges	Charges	Taxes	Charges
Jan	885	0	0	885
Feb	747	0	0	747
Mar	609	0	0	609
Apr	342	0	0	342
May	225	0	0	225
June	134	0	0	134
July	118	0	0	118
Aug	127	0	0	127
Sept	186	0	0	186
Oct	326	0	0	326
Nov	531	0	0	531
Dec	801	0	0	801
Tot.	5,033	0	0	5,033

TABLE 2. MONTHLY TOTALS

Month	Charges (MBTU)	Energy (Gallon)	Effective Rate (MBTU/Gallon)
Jan	885	6,384	0.13870
Feb	747	5,385	0.13870
Mar	<b>6</b> 09	4,389	0.13870
Apr	342	2,463	0.13870
May	225	1,625	0.13870
June	134	968	0.13870
July	118	849	0.13870
Aug	127	917	0.13870
Sept	186	1,344	0.13870
Oct	326	2,353	0.13870
Nov	531	3,829	0.13870
Dec	801	5,777	0.13870
Tot.	5,033	36,283	0.13870

\*\*\*\*\*\*\*\*\*\*

THE SIMULATIONS ESTIMATED HEATING LOAD (1601.96 MBH)
IS WORST CASE CONDITION AND PROBABLY OCCURES
DURING JANUARY. THIS LOAD ONLY REPRESENTS THE
SYSTEMS SIMULATED WHICH REQUIRE SUMMER STEAM,

SINCE THE NEW LOCAL BOILER WILL ONLY BE NEEDED FROM MID APRIL THRU MID OCTOBER WE WILL NOT NEED AS LARGE A BOILER LOAD AS INDICATED BY THE COMPUTER SIMULATION.

IF WE TAKE THE AVERAGE MBTU FOR DAYS IN APRIL (WORST CASE) AND ADD 20% AS A SAFETY FACTOR THE RESULTANT LOAD WILL BE SUFFICIENT TO SELECT A LOCAL STEAM BOILER TO ACCOMMODATE THE BUILDINGS STEAM REQUIREMENTS DURING THE SUMMER.

SUMMER STEAM

AVG. MBTU/DAY

 $\downarrow$ 

APR 11.63 ←

 $11.63/24 = 484.58 \times 1.7 =$ 

581.5 MBH LOAD

MAY 7.36

JUNE 4.81

JULY 4.20

AUG. 4.52

SEPT. 6.44

OCT. 10.58

SELECT: PEERLESS SERIES 7 FDA INDUSTRIAL/COMMERCIAL

CAST IEON BOILER/BURNER UNIT

MODEL 707 FDA SU, 25 Bhp, 10 " & VENT, 7 SECTIONS

OVERALL EFFICIENCY W/PIPING LOSSES & PICKUP = 64 %

INPUT @ 7.4 GPH # 2 = 1026.3 MBH (CORRECTED)

CORRECTED NET OUTPUT = 622.1 MBH

48 "L× 35" W X 60"h (2) 4" SUP TAPS \$ (1) 3" RET.

COMPUTER SIMULATED MAX, EST, HTG LOAD
= 1601.96 MBH (OCCURS IN JAN)

JAN METU = 910 EXPENDED

APR = 349 "

349/910 = ,3835 X 1601.96 = 614.37 MBH

JAN EXPENDED MBTU = 910/31 = 29.354 MBTU/DAY

29.354/24 = 1.223 MBTU/HR

IS LESS THAN EST MAX LOAD

BY 76.3%

" MAYBE BEST TO INCREASE

APR HOURLY EST BY SAME %

581.5/763 × 100 = 762.12 MBH MAX

MONTHLY MBTU EXPENDED FOR SUMMER REHEAT AND DOMESTIC HOT WATER GENERATION AS SIMULATED BY CARRIER E-20 HOURLY ANALSYS COMPUTER PROGRAM.

APR	349/2	=	175	MBTU	1260 GALS
MAY		=	228		1640
JUNE		=	144		1036
JULY		=	130		937
AUG		=	140		1007
SEPT		=	193		1394
OCT	328 /z		164		1182
			1174	MBTU	8,456 GALS

SELECT : 1500 GAL OIL STORAGE TANK 5'-4" \$ x 9' L , 1607 165 , 7 GA.

CONCEDUCTION COS	T ESTI	MATE	•	DATE PREPARED	1001		**
CONSTRUCTION COST	ESI	MAIL		FEB	1991	SHEET OR ESTIMATE	G <i>F</i>
ENERGY SAVINGS	OPPC	RTU	UITY .	SURVEY		CODE A [No design	n completed)
FT. BELVOIR, VIE	241N1A		3LPG	307 :1		DE D (Preliminary of	
ARCHITECT ENGINEER ENGINEERING APPL	ICATION	JS 4	SONSUL	TANTS	· —	HER (Specify)	
DRAWING NO.  OIL FIRED LP STEAM BOILE		ESTIM		EF		CHECKED BY	,
OIL FIRED II SILLIN SOL	QUANTITY LABOR				MATERIAL		
SUMMARY	NO. UNITS	UNIT MEAS.	PER UNIT	TOTAL	PER UNIT	TOTAL	COST
OIL FIRED LP STEAM BOILER	1	EA	·	1800		9130	10,930
1500 GAL OIL STORAGE EQ.		15		4422		9121	13,543
MISC HOOK-UP COSTS		15		335		370	705
VENT CHIMNEY 10"\$	30	LF	7.30	219	58.30	1749	1968
FITTINGS, FLASHING, TOP, Etc.		LS		144		1933	2077
AUTO DRAFT REBULATOR	1:	EA		. 19		141.	160.
STEAM PIPING, FITTURS, VALVES, ETC		15		2605		1166	3771.
CONDENSATE PIPING, TRAPS, Etc.		15		649		898	1547.
RETURN FEEDWATER SYSTEM		LS		880		574	1454,
ELECTRICAL WORK		LS		475		225	700.
	1						
SUB-TOTAL				11,548		25,307.	36,855
LABOR MARKUP 21%				2425			2,425
TAXES 4.5%						1139	1,139
SUB-TOTAL				13 973		26,446	40,419
OVERHEAD 10%							4,042
SUB-TOTAL							44,461
PROFIT 10%							4,446
SUB-TOTAL							48,907
TOTAL							# 48,910
		I					

# OIL STORAGE

30 YR WARRANTEE	
TANK 220 3700 3920 5-4" × 9" L  HOLD DNS. 47 270 317  I" PIPING (50') 3,82 1,47 ,41 5,70  INCASED PIPING (60') 7,15 10,15 76 18,06  FOOT VALVE 12,40 34,50 46,90  PUMP (2) 59 395 454  TANK GAGE SYS 79, 715, 794,  VALUES (2) 8.25 7,75 16,	
HOLD DNS. 47 270 317  I'' PIPING (50) 3,82 1.47,41 5.70  INCASED PIPING (60) 7.15 10:15.76 18.06  FOOT VALVE 12.40 34.50 46.90  PUMP (2) 59 395 454  TANK GAGE SYS 79. 715. 794.  VALUES (2) 8.25 7.75 16.	
PIPING (50) 3,82   1.47 ,41   5.70     INCASED PIPING (60) 7.15   10.15 .76   18.06     158   FOOT VALVE   12.40   34.50   46.90     PUMP (2) 59   395   454     TANK GAGE SYS   79.   715.   794.     VALUES (2) 8.25   7.75   16.	
INCASED PIPING (601) 7.15 10.15.76 18.06  158 FOOT VALVE 12.40 34.50 46.90  PUMP (2) 59 395 454  TANK GAGIE SYS 79. 715. 794.  VALUES (2) 8.25 7.75 16.	
FOOT VALVE 12.40 34.50 46.90  PUMP (2) 59 395 454  TANK GAGE SYS 79. 715. 794.  VALUES (2) 8.25 7.75 16.	
PUMP (2) 59 395 454  TANK GAGE SYS 79. 715. 794.  VALUES (2) 8.25 7.75 16.	
TANK GAGE SYS 79. 715. 794.  VALUES (2) 8.25 7.75 16.	
VALUES (2) 8.25 7.75 16.	
	-
SHUT OFFS (4) 19.80 11.75 31.55	
PAD CY (5) 25. 94. 119	
EXCAVATION CY (115) 27	
4422 6791 11,213	
in the second of the second	
LEAK DETECTION SYSTEM	
CONTROL MASTER W/ALARM 725	
PROBES 4" WELL 760.	
" TANK DOUBLE WALL 650.	
CABLE 195	
and the second of the second o	
OPTIONAL LEAK DETECTION = 2330	<u></u>
4422 9121 B,543	

# STEAM VALVES, PIPING, FITTINGS, VALVES Etc.

				<b>L</b>	🔼 .	1 .	
132	4" 5TA	1. VALVES	os4 y (2)	120	215	335	
	80	ILER DEAL	N	5,80	11.90	17.70	-
87	Pil	PING (	>	9.60	۱ ۲۲،۵	17.40	
-		PING (		·	14 80	3,87 54	62
110		n/flauge		36			
	90	⊃° EUL	(10)	$H_{max}$	14.90	1,62 72	ב'ר.
	Ti	E	(2)	120	27	12.75 159	1.75
	WE	20. WINTS	(20)	39.82			
				2605	1166	37	71

# CONDENSATE PIPING, TRAPS L M T 2" PIPING (40') 6.25 3.30.67 10.72 TRAP ASSEMBLY (2) 90 320 410

WELDING LIBER 27 2.39 24.39

RETURU FEEDWATER

PIPING ()

VALUE

MISC FITTINGS

880 574 1454

		•		i
ALL FUEL	CHIMNEY ,	UL LISTED,	DOUBLE WALL,	304 INNER - STLOUTER

	L	Μ.	T
(30') STR 10"5	\$ 7.30	58.30	65.60
(2) 45° EU	14,60	195	209.60
90° TEE	16.70	214	230.70
PLT. SUPPORT (3)	17.55	123	140,55
ROOF THIMBLE	17.95	310	327.55
ROOF SUP, ASSEM.	18.45	405	423.45
STACK CAP	8.75	245	253,75
	144	1933	2077.

# OIL HOOK-UP

	L	M	T	
FILTER (I)	9.90	9.95	19.95	
VALVE	8.25	4.25	12.50	
VALVE	16.50	8,60	25.00	1,026,300 /4000 = 257 sqin
2" VENT CAP	6.20	7.50	13.70	×115 = 385/144 = 2.67 \$
TUBE (20')	2,53	1,28	3.81	
2" STL V.P. (301)	6.25	4.08,67	11,00	
LOUVERS (2)	7.20	2400	31.20	en e
DAMPERS (2)	17.70	58.30	76	
FILL CAP	6:10	7,50	13.70	
	335	370	705	

BUILDING 309

#### DESIGN PARAMETERS, SHGs

Location : FORT BELVOIR, VIRGINIA
Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program Page 1 of 1

02-07-91 6100190202

#### DESIGN WEATHER PARAMETERS

TABLE 1. MAXIMUM SOLAR HEAT GAINS - AVERAGE DAYS (BTU/hr/sqft)

Month	NE	E	SE	S	SW	W	NW	N	Hor
Jan	18.8	36.2	59.9	68.5	59.9	36.2	18.8	18.8	53.9
Feb	25.7	46.8	67.6	74.7	67.6	46.8	25.7	25.7	74.9
Mar	36.0	64.4	80.5	83.2	80.5	64.4	36.0	36.0	107.8
Apr	53.2	86.3	93.6	88.6	93.6	86.3	53.2	47.1	148.6
May	67.2	92.8	90.1	78.8	90.1	92.8	67.2	52.9	166.3
Jun	78.1	100.7	91.5	76.0	91.5	100.7	78.1	56.4	181.9
Jul	77.1	102.4	95.1	79.9	95.1	102.4	77.1	55.6	182.6
Aug	63.0	95.0	97.7	88.6	97.7	95.0	63.0	50.5	164.5
Sep	44.1	83.2	97.4	96.3	97.4	83.2	44.1	42.5	137.0
Oct	31.8	63.2	85.6	91.3	85.6	63.2	31.8	31.8	98.9
Nov	19.5	34.8	55.6	62.9	55.6	34.8	19.5	19.5	54.7
Dec	14.9	27.2	46.9	54.1	46.9	27.2	14.9	14.9	40.7

TABLE 2. MAXIMUM SOLAR HEAT GAINS - DESIGN DAYS
(BTU/hr/sqft)

			•						
Month	NE	E	SE	s	sw	W	NW	n	Hor
Jan	20.2	157.9	243.4	253.9	243.4	157.9	20.2	20.2	140.3
Feb	52.5	188.6	246.3	238.2	246.3	188.6	52.5	24.6	186.3
Mar	95.5	219.4	234.8	201.8	234.8	219.4	95.5	29.3	227.8
Apr	141.3	224.3	200.7	148.1	200.7	224.3	141.3	34.1	255.2
May	165.9	220.1	171.5	106.1	171.5	220.1	165.9	37.3	267.4
Jun	173.0	215.4	157.5	89.2	157.5	215.4	173.0	47.4	269.3
Jul	163.5	215.7	167.2	102.9	167.2	215.7	163.5	38.2	264.2
Aug	136.2	216.5	193.7	143.1	193.7	216.5	136.2	35.7	250.5
Sep	89.8	206.8	224.9	195.9	224.9	206.8	89.8	30.4	220.2
Oct	51.4	182.2	238.2	231.2	238.2	182.2	51.4	25.4	183.0
Nov	20.6	155.1	239.4	250.0	239.4	155.1	20.6	20.6	139.7
Dec	18.3	140.7	235.7	254.0	235.7	140.7	18.3	18.3	120.5

# MASTER SCHEDULE SUMMARY

Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program

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**************************************												
MASTER SCHEDU	LE 1	. occ	UPANC	Y 			Hou	CIA be	ercen	cages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	0	0	0	0	0	10	50	100	100	100	100
Saturday	0	0	0	0	0	0	10	10	10	20	20	20
Sunday	0	0	0	0	0	0	10	10	10	10	10	10
DESIGN	0	0	0	0	0	0	10	50	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	80	80	100	100	100	50	50	25	0	0	0	0
Saturday	20	20	20	20	10	10	10	0	0	0	0	0
Sunday	10	10	10	10	10	10	10	0	0	0	0	0
DESIGN	100	100	100	100	100	50	50	25	0	0	0	0
**************************************												
MASTER SCHEDU	LE 2	. LIG	HTING				Hou	LIA P	ercen	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	5	5	5	5	5	5	50	50	100	100	100	100
Saturday	5	5	5	5	5	5	5	10	20	20	20	20
Sunday	5	5	5	5	5	5	10	10	10	10	10	10
DESIGN	5	5	5	5	5	5	50	50	100	100	100	100
dour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	100	100	100	50	50	5	5	5
Saturday	20	20	20	20	20	20	20	5	5	5	5	5
Sunday	10	10	10	10	10	10	5	5	5	5	5	5
DESIGN	100	100	100	100	100	100	100	50	50	5	5	5
******			***** LIANC		****	****	****			***** tages	****	****
MASTER SCHEDU		. APP.						TIY P				
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	0	0	0	0	0	10		4	50		50
Saturday	0	0	0	0	0	0	10	10	10	10	10	10
Sunday	0	0	0	0	0	0	10	10	10	10	10	10
DESIGN	0	0	0	0	0	0	10	20	20	50	50	50
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	50	50	50	50	20	20	20	0	0	0	0	0
Saturday	10	10	10	10	10	10	10	0	0	0	0	0
Sunday	10	10	10	10	10	10	10	0	0	0	0	0
DESIGN	50	50	50	50	20	20	20	0	0	0	0	0
******	****	****	<del>-</del>	****	****	****	****	****	****	****	****	***

MASTER SCHEDULE SUMMARY

Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program

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Carrier Hourly	y Ana	lysis	Prog:	ram						6 ****	10019 *****	
ASTER SCHEDU	LE 4	. PC'	6 				Hou	rly P		tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	o	0	0	0	0	0	10	50	100	100	100	100
Saturday	0	0	0	0	0	0	10	10	10	20	20	20
Sunday	0	0	0	0	0	0	10	10	10	10	10	10
DESIGN	0	0	0	0	0	0	10	50	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	80	80	100	100	100	50	50	20	0	o	0	0
Saturday	20	20	20	20	10	10	10	0	0	0	0	0
Sunday	10	10	10	10	10	10	10	0	0	0	0	0
DESIGN	100	100	100	100	100	50	50	20	0	0	0	0
*****			****	****	****	****	****	****		****	****	***
MASTER SCHEDU	LE 5	. SIM	ULATO					LIY P	ercen	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	5	5	5	5	5	5	5	25	25	25	25	25
Saturday	5	5	5	5	5	5	5	5	5	5	5	5
Sunday	5	5	5	5	5	5	5	5	5	5	5	5
DESIGN	5	5	5	5	5	5	5	25	25	25	25	25
iour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	25	25	25	25	25	25	25	25	5	5	5	5
Saturday	5	5	5	5	5	5	5	5	5	5	5	5
Sunday	5	5	5	5	5	5	5	5	5	5	5	5
DESIGN	25	25	25	25	25	25	25	25	5	5	5	5
*****				****	****	****	****	****		****	****	****
MASTER SCHEDU	LE 6	. DOM	ESTIC	HOT !	WATER		Hou	rly Po	ercen	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	0	0	0	0	5	10	10	20	20	20	80
Saturday	0	0	0	0	0	2	2	2	5	5	5	5
Sunday	0	0	0	0	0	0	0	2	2	2	2	2
DESIGN	0	0	0	0	0	5 	5	20	20	20	20	80
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	80	20	20	20	10	10	5	5	5	2	0	0
Saturday	5	5	5	2	2	2	2	2	0	0	0	0
Sunday	2	2	2	2	2	2	0	0	0	0	0	0
DESIGN	80	20	20	20	10	10	5	5	2	2	0	0
******	****	****	****	****	****	****	****	****	****	****	 ****	****

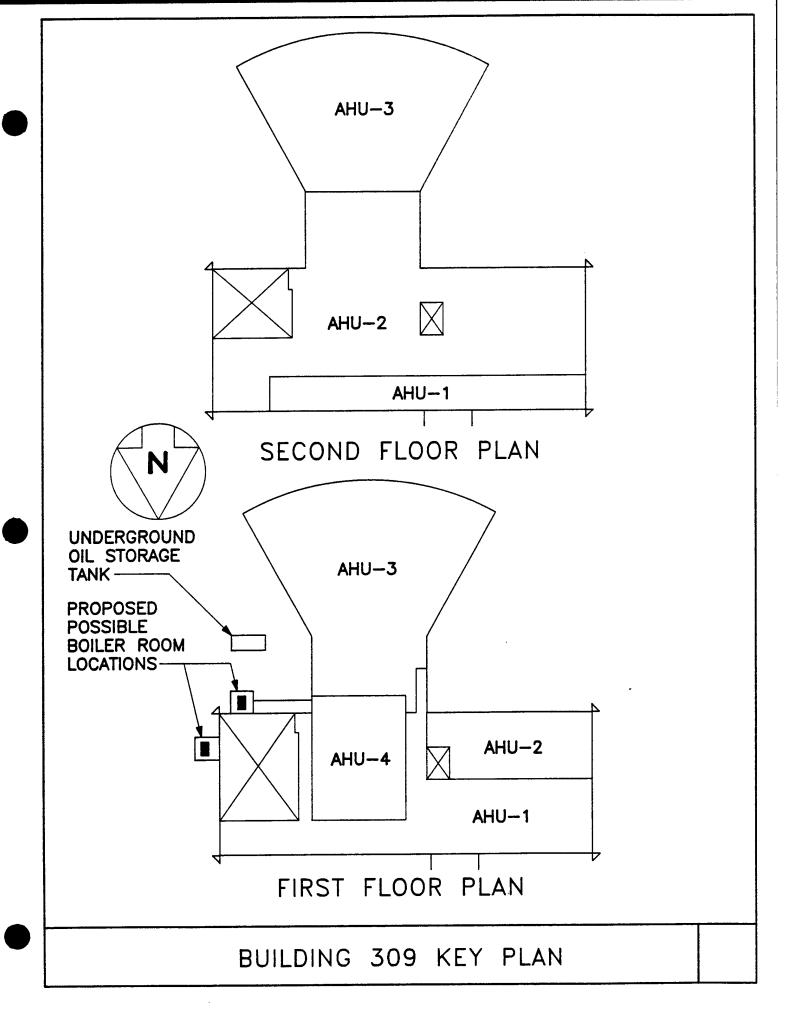
DAY TYPE DATA

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program

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Month	DAY TYPE 1 Weekday	DAY TYPE 2 Saturday	DAY TYPE 3 Sunday	Total Days/Month
January	21	4	6	31
February	19	4	5	28
March	22	5	4	31
April	21	4	5	30
May	22	4	5	31
June	21	4	5	30
July	21	4	6	31
August	23	4	4	31
September	19	5	6	30
October	23	4	4	31
November	21	4	5	30
December	20	5	6	31



COMPLEX SPACE DESCRIPTION Space Name : #309 SIMULATION CHAMBER 02-07-91 Prepared By : ENGG APPLICATIONS CONSUL 6100190202 Carrier Hourly Analysis Program Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\*\* . SPACE NAME = #309 SIMULATION CHAMBER \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 2) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) M M M 0.240 Wall Type 1 M 0.250 Wall Type 2 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 .............. 2,880.0 NE 0.0 NA 350.0 E 0.0 NA SE 2,000.0 0.0 NA 2,000.0 S 0.0 NA 2,000.0 0.0 SW NA 0.0 350.0 NA W 2,880.0 NW 0.0 0.0 3. ROOF INFORMATION (Number of Roof Types = 1) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) \_\_\_\_\_ 0.090 7,600.0 4. GLASS INFORMATION (Number of Glass Types = 1) \_\_\_\_\_\_ U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades

	G	lass Type	1	0.5	00	1.00	Y	
		<		- Extern	al Shading	Informatio	n	>
		Window	Window	Reveal	Overhang	Overhang	Fin	Fin
		Height	Width	Depth	Height	Extension	Separation	Exten.
		(ft)	(ft)	(in)	(in)	(in)	(in)	(in)
Shade	1	8.0	4.0	0.0	0.0	0.0	0.0	0.0
Shade	2	8.0	4.0	0.0	0.0	0.0	0.0	0.0
Shade	3	8.0	4.0	0.0	0.0	0.0	0.0	0.0
****	 ***	*****	 ******	*****	******	******	******	*****

Space Name : #309 SIMULATION CHAMBER Prepared By : ENGG APPLICATIONS CONSUL

02-07-91 6100190202

Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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. GLASS INFORMATION (continued)

<				Glass	Are	 eas	(saft)				>
·		1				ype					
Exposure		Shade	е	7	lrea		Shade		Are	a	Shade
NE	0.0	0				NA	NA			NA	NA
E	0.0					NA	NA			NA	NA
SE	0.0	0				NA	NA			NA	NA
S	0.0					NA	NA			NA	
SW	0.0					NA	NA			NA	
W	0.0					NA	NA			NA	
NW	0.0					NA	NA			NA	_
N	0.0					NA	NA			NA	
Н	0.0	0				NA	NA			NA	NA
******	****	****	***	****	***	***	****	***	*****	***	*****
5. INTERNAL LOA	DS										
SPACE DATA :	Floor A	rea	=	7,6	00	sqft	Buil	ding	y Wt. =	М	lb/sqft
PEOPLE :	sqft/pe:	raon			) ()		Tota	1 P4	eople		0
FEOFLE :	Schedule	e No.	=	•	1				y Level		
LIGHTING :	W/sqft		=	4.	74		Tota	l Wa	atts	=	36,000
	Schedul										1.00
	Fixture	_	=		1 I	Rece	ssed,	not	vented		
OFFICE BY BOTTO	** / £ b				00			1 137	atts		0
OTHER ELECTRIC:	W/sqit Schedule			0.	1		TOTA	T Me	1668	-	U
	Schedar										
MISC. SENSIBLE:	Load		=		0 1	BTU/	hr Sc	hedi	ıle No.	=	1
MISC. LATENT :									ıle No.		
*********					****	***	*****	***	*****	****	******
6. PARTITIONS,	INFILTRA	TION,	GRO	UND							
									: - :		
PARTITIONS (Nex	Area	onait		u spac U-Valu					ing		eating
	(sqft)								-		-
	(adrr)		(DIO		11 6/1	-	(ueg		JI 9)		
Walls	0.0			0.100	)			90.0	) F		50.0 F
Ceilings	0.0			0.100					F		50.0 F
Floors	0.0			0.100				90.0			50.0 F
INFILTRATION							OUND E				
Cooling : 0.1	U CFM/sq	It =					rea				0.0 sqft
Heating: 0.2											0.0 ft
Typical : 0.2	O CFM/BQ	IT =		1,52U	Crm	L	epth		: 		0.0 ft
******	*****	****	***	****	***	***	****	***	*****	****	*****

02-07-91 Space Name : #309 OFFICE SPACES (FF) 6100190202 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\* . SPACE NAME = #309 OFFICE SPACES (FF) \*\*\*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 1) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) Wall Type 1 0.300 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 \_\_\_\_\_\_ NE 0.0 NA NA 135.0 NA NA E SE 0.0 NA NA 0.0 S NA SW 0.0 NA NA 315.0 NA W NW 0.0 NA 1,620.0 ROOF INFORMATION (Number of Roof Types = 1) \_\_\_\_\_ Weight Ext Color U-Value Lb/sqft) (D,M,L) (BTU/hr/sqft/F) (lb/sqft) 0.090 \*\*\*\*\*\*\*\*\*\*\* 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades 0.500 Glass Type 1 <----> External Shading Information -----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) \_\_\_\_\_ Shade 1 8.0 4.0 0.0 0.0 0.0 0.0 0.0 Shade 2 8.0 4.0 0.0 0.0 0.0 0.0 0.0 Shade 3 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

Space Name: #309 OFFICE SPACES (FF) 02-07-91
Prepared By: ENGG APPLICATIONS CONSUL 6100190202
Carrier Hourly Analysis Program Page 2 of 2

\*\*\*\*\*\*\*\*\*\*\*\*

. GLASS INFORMATION (continued)

Exposure			Type Area	1	 e	Glas	s Ar T Area	eas Type	(sqft) 2 Shade	)	Are	Type a	3 Sha	
NE			0.0					NA	NA			NA	N.	A
E			77.0					NA	NA			NA	N.P	A
SE			0.0	_				NA				NA		
S			0.0					NA				NA		
SW			0.0					NA				NA		
W			90.0					NA				NA		
NW			924.0					NA				NA		-
N H			0.0					NA NA				NA NA		
******** 5. INTERN  SPACE DAT	AL	LOAI	S S Floor A											
PEOPLE		:	sqft/pe:	rson	=	22	7.0		Tota	al Pe	ople	=		20
			Schedul	e No.			1		Acti	Lvity	Level	=		2
LIGHTING		 :	W/saft		=	2.	 .50					=	11	 350
			Schedul											
			Fixture											
OTHER ELE	CTR	IC:	W/sqft Schedul				.20 4		Tota	al Wa	tts	=	10	,000
MISC. SEN MISC. LAT			Load Load		=				hr So					1
******** 6. PARTIT			to Unc	onditi	Lone	Spac	*** ***	****	Unc	****	*****  tioned	****	**** 	emp.
		(	Area (sqft)	(	J BTU)	J-Valu	ıe qft/	<b>'F</b> )	(deg	0011 F 0	ng r %)	Hed)	eati F c	.ng or %)
 Walls			0.0			0.100					 F			
Ceilings			0.0			0.100					F			
Floors			0.0			0.100					F		50.0	
 INFILTRAT								GF	ROUND E	LEME				
Cooling Heating			CFM/sa	ft =		272	CFM					4,540	0.0	saft
	•		,	 		454	CEN	. T	Parimet	- ~ ~	•	240	1 0	f+
Heating Typical	:	0.10	J CFM/BO	LC =		7.7	CFM		et Tiller	.er	ě	241	J. U	

Space Name : #309 OFFICE SPACES (SF) 02-07-91 6100190202 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #309 OFFICE SPACES (SF) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* WALL INFORMATION (Number of Wall Types = 1) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) Wall Type 1 0.300 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 \_\_\_\_\_\_ 0.0 NA NE 0.0 NA NA E 0.0 NA SE NA NA S 0.0 0.0 NA NA SW 0.0 NA W NW 0.0 NA 1,380.0 ROOF INFORMATION (Number of Roof Types = 1) Weight Ext Color U-Value (BTU/hr/sqft/F) (lb/sqft) (D,M,L) \_\_\_\_\_\_ 0.090 \*\*\*\*\*\*\*\*\*\*\* 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades 0.500 1.00 Glass Type 1 <---->
<----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) 

 Shade 1
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0

 Shade 2
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0

 Shade 3
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0

 0.0 0.0 0.0

\*\*\*\*\*\*\*\*\*\*\*\*

Space Name: #309 OFFICE SPACES (SF)
Prepared By: ENGG APPLICATIONS CONSUL

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Carrier Hourly Analysis Program

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4. GLASS INFORMATION (continued)

	<				Glass ?		(sqft) -			
_		Type			_	Type		3		
Exposure		Area	Snad	e 	Are	:a 	Shade	Area	1 	Shade
NE		0.0	0			NA	NA		NA	NA
E		0.0	0			NA	NA		NA	NA
SE		0.0	0			NA	NA		NA	NA
S		0.0	0			NA	NA		NA	NA
SW		0.0	0			NA	NA		NA	NA
W		0.0	0			NA	NA		NA	NA
NW		0.0	0			NA	NA		NA	NA
N		660.0	0			NA			NA	
H		0.0	0			NA	NA		NA	NA
********** 5. INTERNAL	LOAI		****	****	******	****	******	******	****	******
SPACE DATA	:	Floor A	ea	=	2,280					
PEOPLE	:	sqft/per	cson	=	190.0	)	Total 1	People	=	12
		Schedule	No.	=	1		Activi	ty Level	=	
LIGHTING		W/saft						 Watts		5 - 700
DIGHTING	•	Schedule			2.50			e Mult.		
					3	Rece	essed, no			
OTHER ELECT	KIC:	w/sqrt Schedule			3.00		Total	Watts	=	0,040
		Schedule	NO.	_ 						
MISC. SENSI	RI.E.	Load		=		BTU	hr Schee	dule No.	=	:
MISC. LATEN				=			hr Sche			
*********** 6. PARTITIO	NS, :	INFILTRA	rion,	GROU	ND					
PARTITIONS	(Next	t to Unco	ondit	ioned	Spaces	3)	Uncon	ditioned	Spac	ce Temp
		Area		บ	-Value		Cool	ling	He	eating
		(sqft)		(BTU/	hr/sqft	(F)	(deg F	or %)	(deg	F or %
Walls		0.0			 0.100		90	.0 F	!	50.0 F
Ceilings		0.0			0.100			.0 F		50.0 F
Floors		0.0			0.100		90	.0 F		50.0 F
 INFILTRATIO	 N					G1	ROUND ELE	MENT		
Cooling :		6 CFM/sat	ft =		137 CF		Area	:	(	0.0 sqft
					228 CI		Perimeter	:		0.0 ft
Heating :	0.11	J Crm/bul	_			** *		•		J. U. L. U

Space Name : #309 COMPUTER AREA 02-07-91 6100190202 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #309 COMPUTER AREA \*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 1) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) Wall Type 1 M 0.300 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 NA NE 0.0 NA E 0.0 NA SE 0.0 NA NA S 0.0 NA SW 0.0 NA W 0.0 NA NW 0.0 NA NA 0.0 N \*\*\*\*\*\*\*\*\*\*\*\* ROOF INFORMATION (Number of Roof Types = 1) \_\_\_\_\_\_ Weight Ext Color U-Value Area lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) (lb/sqft) \_\_\_\_\_\_\_ 0.090 \*\*\*\*\*\*\*\*\*\*\* 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades 0.500 1.00 Glass Type 1 <---->
<----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) Shade 1 8.0 4.0 0.0 0.0 0.0 Shade 2 8.0 4.0 0.0 0.0 0.0 Shade 3 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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Space Name : #309 COMPUTER AREA

Prepared By: ENGG APPLICATIONS CONSUL 6100190202

Carrier Hourly Analysis Program Page 2 of 2

. GLASS INFORMATION (continued)

	<								t) -					>
		Type			A	T	ype	2			Are	Type	3	<b>.</b> -
Exposure		Area 		e 	 	irea		Shade	9 		are		Sha 	ae 
NE		0.0					NA	NA				NA	NA	
E		0.0	0				NA	NA				NA	NA	
SE		0.0	0				NA					NA		
S		0.0	0				NA					NA		
SW		0.0	0				NA					NA	_	
W		0.0	0				NA	_				NA		
NW N		0.0	0				NA NA					NA NA		
N H		0.0						NA				NA		
****	****	*****	****	***	*****	***	***	****	***	***	****	***	***	***
5. INTERNA	L LOAI	os												
SPACE DATA	:	Floor A	cea		1,4									
PEOPLE	•	sqft/per	rson	=	245	5.0		Tot	tal	Peo	ple	=		
E EOF DE	•	Schedule	e No.	=		1		Act						
LIGHTING	:	W/sqft		=	2.	13		Tot	tal	Wat	ts	=	3	,12
		Schedule	e No.	=		2	_	Wat	ttag	e M	ult.	=		1.0
)		Fixture						essed						
OTHER ELEC	TRICE											=	22	.05
JIIIDK ZDZO	21(20)	Schedule				4								,
MISC. SENS														
MISC. LATE	NT :	Load		_ =		0 1	BTU/	hr s	Sche	dul	e No.	=		
*******					*****	****	 ****	****	****	***	****	****	 ****	***
6. PARTITI														
PARTITIONS	(Next	t to Unc	ondit	ione	d Spac	es)		U						
		Area			U-Valu						g			
		(sqft)		(BTU	/hr/sq	Ift/	F)	(de	eg F	or	8)	(deg	Fo	r %
Walls		0.0			0.100	·			 مو	.0	 F		50.0	 F
walls Ceilings		0.0			0.100					.0			50.0	
Floors		0.0			0.100					.0			50.0	
INFILTRATI								ROUND					_	
Cooling					88								0.0	_
Heating					147			Perimo					0.0	
Typical	· 0.10	O CFM/sq	ft =		147	CFM	I	epth			:		0.0	İt

Space Name : #309 LAB AREA (FF) 02-07-91 Prepared By : ENGG APPLICATIONS CONSUL 6100190202 Page 1 of 2 Carrier Hourly Analysis Program . SPACE NAME = #309 LAB AREA (FF) \*\*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 1) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) Wall Type 1 0.300 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 0.0 NE NA NA E 0.0 NA SE 0.0 NA 648.0 S NA SW 0.0 NA 306.0 NA W NW 0.0 NA 3. ROOF INFORMATION (Number of Roof Types = 1) Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) 0.090 \*\*\*\*\*\*\*\*\*\*\*\*\*\* 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades 0.500 1.00 Glass Type 1 <---->
External Shading Information -----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) \_\_\_\_\_\_ 
 Shade 1
 8.0
 4.0
 0.0
 0.0
 0.0

 Shade 2
 8.0
 4.0
 0.0
 0.0
 0.0

 Shade 3
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0 0.0 0.0 0.0 0.0

Space Name: #309 LAB AREA (FF) 02-07-91
Prepared By: ENGG APPLICATIONS CONSUL 6100190202
Carrier Hourly Analysis Program Page 2 of 2

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<					Glass	Ar	eas	(sqft)			>
Exposure		Type Area	1			T	ype		Are	Type ea	3 Shade
NE		0.0	0					. NA		NA	
E		0.0					NA	NA		NA	NA
SE		0.0	0				NA	NA		NA	NA
s		0.0	0				NA	NA		NA	NA
SW		0.0	0				NA	NA		NA	NA
W		0.0	0				NΑ	NA		NA	NA
NW		0.0					NA	NA		NA	NA
N		0.0	0				NA	NA		NA	NA
H		0.0	0				NA	NA		NA	NA
************ 5. INTERNAL L	OAI	os				***	***	*****	*****	****	*****
SPACE DATA	:		:ea			50	sqft		ding Wt. =	= M	lb/sqf
PEOPLE				=	204	. 2		Tota	l People	=	1
		Schedule	No.	=		1		Acti	vity Level		
LIGHTING		W/saft							 l Watts	=	6,00
		Schedule	No.	=		1			age Mult.		1.0
		Fixture	Type	=		1	Rece	essed,	not vented	ì	
THER ELECTRI		W/sqft		=	 4.	 07		Tota	l Watts	=	9,96
		Schedule									
AISC. SENSIBL	 E:	Load		=		0	 BTU/	hr Sc	hedule No.	=	
MISC. LATENT	:	Load		=					hedule No.		
**************************************						***	****	*****	******	****	*****
PARTITIONS (N	ext		ondit:	ione	d Spac	es)		Unc	onditioned	Spa	e Temp
		Area		,	J-Valu /hr/sq	e e /	<b>-</b> .	(C)	ooling F or %)	ne 	eating
		(sqft) 		(BTU,	/nr/sq	IT/.	F') 	( aeg	F OF %)	(aeg	r or *
Valls		0.0							90.0 F		
Ceilings		0.0							90.0 F		
Floors		0.0			0.100				90.0 F	!	50.0 F
NFILTRATION		<b></b>					GF	OUND E	LEMENT		
Cooling : 0	.0	CFM/sqf	t =		147	CFM	P	rea	:	2,450	0.0 sqf
Heating : 0	.10	CFM/sqf	t =		245	CFM	F	Perimet	: er :	10	5.0 ft
											0.0 ft

02-07-91 Space Name : #309 LAB AREA (SF) Prepared By : ENGG APPLICATIONS CONSUL 6100190202 Carrier Hourly Analysis Program Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\*\*\* . SPACE NAME = #309 LAB AREA (SF) \*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 1) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) Wall Type 1 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 NE 0.0 NA E 0.0 NA SE 0.0 NA NA 864.0 S NA NA SW 0.0 NA 783.0 NA NA W 0.0 NA NW 135.0 \*\*\*\*\*\*\*\*\*\*\*\* ROOF INFORMATION (Number of Roof Types = 1) Weight Ext Color U-Value Area lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) (lb/sqft) 0.090 \*\*\*\*\*\*\*\*\*\* 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades Glass Type 1 <---->
External Shading Information -----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) Shade 1 8.0 4.0 0.0 0.0 0.0 0.0 Shade 2 8.0 4.0 0.0 0.0 0.0 0.0 Shade 3 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

Space Name: #309 LAB AREA (SF) 02-07-91
Prepared By: ENGG APPLICATIONS CONSUL 6100190202
Carrier Hourly Analysis Program Page 2 of 2

\*\*\*\*\*\*\*\*\*\*\*\*\*

4. GLASS INFORMATION (continued)

4. GLASS INFO									
<.	Туре					(sqft) 2		Type	
Exposure	Area			Are					
NE	0.0	0			NA	NA		NA	NA
E	0.0	0			NA	NA		NA	NA
SE	0.0	0			NA			NA	
S	390.0	0			NA			NA	
SW	0.0	0			NA			NA	
W	0.0	0			NA			NA	
NW	0.0	0			NA			NA	
N H	75.0 0.0	0			NA NA			NA NA	NA NA
******	******	****	****	*****	****	*****	 ******	****	*****
5. INTERNAL LO  SPACE DATA		ea				Buildi			lb/sqft
PEOPLE	: sqft/per	son		240.3		Total 1	People		 36
	Schedule			1		Activi			
LIGHTING	: W/sqft		=	3.78		Total V	Watts	=	32,720
	Schedule	No.	=	2			Mult.		1.00
	Fixture	Type	=	1	Rece	essed, not	vented		
OTHER ELECTRIC				3.07		Total V	√atts	=	26,560
	Schedule	No.	= 	4					
MISC. SENSIBLE						hr Sched			
MISC. LATENT	: Load		=	0 	BTU/	hr Sched	dule No.	= 	1
**************************************					****	******	*****	****	*****
PARTITIONS (Ne		nditi		_				_	-
	Area			-Value			ling		
	(sqit)	()	BTU/	nr/sqit,	/F) 	(deg F	or %)	(deg	F or %)
Walls	0.0			0.100		90.	0 F	5	0.0 F
	0.0			0.100		90.	0 F	5	0.0 F
Cellings				0.100		90.	OF	5	0.0 F
-	0.0								
Floors	0.0				GF	ROUND ELEN			
Floors		t =		~~~~~		ROUND ELEN			 .0 sqft
Ceilings FloorsINFILTRATION Cooling : 0. Heating : 0. Typical : 0.	.06 CFM/sqf .10 CFM/sqf	t =		519 CFN 865 CFN	1 A 1 P	ROUND ELEM Area Perimeter	MENT	0	0.0 sqft

ZONE DESCRIPTION

02-07-91 Zone Name : Office AREA (FF) Prepared By : ENGG APPLICATIONS CONSUL 6100190202 Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\* . ZONE NAME AND TYPE Zone Name = Office AREA (FF) Job Name = Default Job Zone Type = 1 (Normal Zone) 2. THERMOSTAT AND EQUIPMENT SCHEDULE COOLING EQUIPMENT Unoccupied cooling thermostat setpoint = 75.0 F
Starting hour of occupied period = 75.0 F Starting hour of occupied period 24 Number of hours in occupied period HEATING EQUIPMENT Heating thermostat setpoint = 68.0 F\*\*\*\*\*\*\*\*\*\*\*\* 3. COOLING SYSTEM PARAMETERS SUPPLY AIR Type of input = 3 (S Supply temperature = 57.3 F 3 (Supply Temperature) VENTILATION AIR Type of input = 2 (CFN Ventilation air = 2,650 CFM 2 (CFM) SAFETY FACTOR Cooling safety factor = 0 % \*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\* 4. HEATING SYSTEM PARAMETERS ATING SOURCE

Type of system = 1 (Warm Air)

Supply temperature = 102.8 F HEATING SOURCE VENTILATION AIR = 2 (CFM) Type of input Ventilation air = 2,650 CFM SAFETY FACTOR 0 % Heating safety factor = 5. OTHER SYSTEM PARAMETERS SUPPLY FAN = 2.50 in wg Total static pressure 54 % Total efficiency = Fan configuration = 2 (Blow-Thru) EXHAUST AIR Direct exhaust air flow rate = 0 % of vent. air RETURN AIR Is a return plenum used COIL DATA = Cooling coil bypass factor 0.050 \*\*\*\*\*\*\*\*\*\*\* 6. SPACES INCLUDED IN ZONE Qty. | Space Name Space Name 2 #309 OFFICE SPACES (FF) x 1

ZONE DESCRIPTION

02-07-91 Zone Name : OFFICE AREA (SF) 6100190202 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\* 1. ZONE NAME AND TYPE Zone Name = OFFICE AREA (SF) Job Name = Default Job Zone Type = 1 (Normal Zone) = Default Job \*\*\*\*\*\*\*\*\*\*\*\*\* 2. THERMOSTAT AND EQUIPMENT SCHEDULE COOLING EQUIPMENT = 75.0 F Occupied cooling thermostat setpoint Unoccupied cooling thermostat setpoint Starting hour of occupied period = 75.0 F0 24 Number of hours in occupied period HEATING EOUIPMENT Heating thermostat setpoint \*\*\*\*\*\*\*\*\*\*\* 3. COOLING SYSTEM PARAMETERS SUPPLY AIR Type of input = 3 (8
Supply temperature = 57.3 F 3 (Supply Temperature) VENTILATION AIR Type of input 2 (CFM) = 2 (CFI = 2,650 CFM Ventilation air SAFETY FACTOR Cooling safety factor 0 % \*\*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\* 4. HEATING SYSTEM PARAMETERS ATING SOURCE

Type of system = 1 (Warm Air)

Supply temperature = 102.8 F HEATING SOURCE VENTILATION AIR 2 (CFM) Type of input = = 2 (CF) = 2,650 CFM Ventilation air SAFETY FACTOR Heating safety factor = 0 % \*\*\*\*\*\*\*\*\*\*\* 5. OTHER SYSTEM PARAMETERS SUPPLY FAN = 2.50 in wg Total static pressure 54 % Total efficiency = 2 (Blow-Thru) Fan configuration EXHAUST AIR 0 % of vent. air Direct exhaust air flow rate RETURN AIR Is a return plenum used COIL DATA = 0.050 Cooling coil bypass factor \*\*\*\*\*\*\*\*\*\* 6. SPACES INCLUDED IN ZONE Qty. | Space Name Space Name 3 #309 OFFICE SPACES (SF) x 1 \*\*\*\*\*\*\*\*\*\*\*\*\*

Name: #309 OFFICES AHU 02-07-91
Carrier Hourly Analysis Program 6100190202
Prepared By: ENGG APPLICATIONS CONSUL Page 1 of 2

\*\*\*\*\*\*\*\*\*\*\*\*\*

1. SYSTEM NAME AND TYPE

System Name = #309 OFFICES AHU
System Class = Constant Volume
System Type = (MZ) Multizone

Number of Zones = 2

\*\*\*\*\*\*\*\*\*\*\*\*

2. SPACE SELECTION (see separate printout)

\*\*\*\*\*\*\*\*\*\*\*\*\*

# 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA

Operation		Thermostat	Setpoints	Ventilation
Period		Cooling	Heating	Dampers
Occupied		75.0 F	68.0 F	OPEN
Unoccupied		75.0 F	68.0 F	OPEN
Weekday Saturday Sunday Design Day	: Occupied E	Period Begins Period Begins Period Begins Period Begins	at 0;	Duration = 24 hrs

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# 4. SUPPLY, VENTILATION, RETURN AIR DATA

SUPPLY AIR

Supply air flow rate = 7200.00 CFM

Hot deck supply temperature = 102.8 F

First month hot deck is on = Jan

Last month hot deck is on = Dec

VENTILATION AIR

Nominal ventilation flow rate = 2650.00 CFM Minimum ventilation flow rate = 1750.00 CFM

Damper leak rate = 5 % of vent air

RETURN AIR

Zone exhaust air flow rate = 0.00 CFM
Zone exhaust fan power = 0.0 kW
Is a return plenum used ? N

\*

02-07-91 Name: #309 OFFICES AHU 6100190202 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 2 of 2 \*\*\*\*\*\*\*\*\*\*\*\*\*\* . FAN DATA SUPPLY FAN 2:Forward curved Type = 2.25 in wg Static 60 **%** Efficiency = 2 Blow-thru Configuration RETURN FAN 2:Forward curved Type = 0.75 in wg Static Efficiency = 60 % \*\*\*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL (Not used) OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL (Not available) \*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA = 0.050Cooling coil bypass factor Type of supplemental heating = 0.050

Type of supplemental heating = 1 Not Used \*\*\*\*\*\*\*\*\*\*

02-07-91 Name : #309 LAB AREAS AHU 6100190202 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2

1. SYSTEM NAME AND TYPE

System Name = #309 LAB AREAS AHU

System Class = Constant Volume
System Type = (CV/RH) Constant Volume w/ Terminal Reheat

Number of Zones = 2

\*\*\*\*\*\*\*\*\*\*\*

SPACE SELECTION (see separate printout)

\*\*\*\*\*\*\*\*\*\*\*\*\*

## 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA

Operation Period			Ther Cooli	mostat ng	-	points Heating		Ventilation Dampers
Occupied Unoccupied			75.0 75.0	_		68.0 F 68.0 F		OPEN OPEN
Weekday Saturday Sunday Design Day	:	Occupied Occupied Occupied Occupied	Period Period	Begins Begins	at at	0 ; 0 ;	Duration Duration Duration Duration	= 24 hrs = 24 hrs

\*\*\*\*\*\*\*\*\*\*\*

# 4. SUPPLY, VENTILATION, RETURN AIR DATA

SUPPLY AIR

Supply air flow rate Supply temperature control = 15200.00 CFM 1 Constant =

VENTILATION AIR

Nominal ventilation flow rate = 6200.00 CFM Minimum ventilation flow rate = 6200.00 CFM

5 % of vent air Damper leak rate

RETURN AIR

Zone exhaust air flow rate = 6200.00 CFMZone exhaust fan power = 8.5 kWZone exhaust fan power Is a return plenum used ? N \*\*\*\*\*\*\*\*\*\*\*

309-22

Name : #309 LAB AREAS AHU 02-07-91 6100190202 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 2 of 2 \*\*\*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN 2:Forward curved Type = 2.75 in wg Static 60 % Efficiency Configuration 1 Draw-thru RETURN FAN 2:Forward curved Type 1.00 in wg Static Efficiency 54 % \*\*\*\*\*\*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL (Not used) OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL (Not used) \*\*\*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050 Type of supplemental heating = 1 Not Used \*\*\*\*\*\*\*\*\*\*

AIR SYSTEM DESCRIPTION 02-07-91 Name: #309 SIMULATOR CHAMB AHU 6100190202 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\* 1. SYSTEM NAME AND TYPE System Name = #309 SIMULATOR CHAMB AHU

System Class = Constant Volume

System Type = (CV/RH) Constant Volume w/ Terminal Reheat

Number of Zones = 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\* SPACE SELECTION (see separate printout) \*\*\*\*\*\*\*\*\*\*\*\*\* 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA Operation Thermostat Setpoints
Period Cooling Heating Ventilation Dampers \_\_\_\_\_\_ Occupied 75.0 F 68.0 F Unoccupied 75.0 F 68.0 F OPEN OPEN Weekday : Occupied Period Begins at 0 ; Duration = 24 hrs Saturday : Occupied Period Begins at 0 ; Duration = 24 hrs Sunday : Occupied Period Begins at 0 ; Duration = 24 hrs Design Day : Occupied Period Begins at 0 ; Duration = 24 hrs \_\_\_\_\_ \*\*\*\*\*\*\*\*\*\*\*\*\*\* 4. SUPPLY, VENTILATION, RETURN AIR DATA SUPPLY AIR Supply air flow rate = 20000.00 CFM Supply temperature control = 1 Cons 1 Constant

VENTILATION AIR

Nominal ventilation flow rate = 3000.00 CFM
Minimum ventilation flow rate = 3000.00 CFM

Partner lock rate

5 % of vent air = Damper leak rate

RETURN AIR

Zone exhaust air flow rate = 0.00 CFM

Zone exhaust fan power = 0.0 kW

Is a return plenum used ? N

\*\*\*\*\*\*\*\*\*\*\*\*\*

02-07-91 Name : #309 SIMULATOR CHAMB AHU 6100190202 Carrier Hourly Analysis Program Page 2 of 2 Prepared By : ENGG APPLICATIONS CONSUL \*\*\*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN 2:Forward curved Type = 2.50 in wg Static Efficiency 60 **%** Configuration 1 Draw-thru RETURN FAN Type = 1:(Fan does not exist) \*\*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL (Not used) OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL (Not used) \*\*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA = 0.050Cooling coil bypass factor Type of supplemental heating = 1 Not Used \*\*\*\*\*\*\*\*\*\*\*

02-07-91 Name: #309 COMPUTER ROOM AHU 6100190202 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2

\*\*\*\*\*\*\*\*\*\*\*\*

. SYSTEM NAME AND TYPE

System Name = #309 COMPUTER ROOM AHU

System Class = Constant Volume
System Type = (SZCV) Single Zone Constant Volume
Operation Type = 3 Cooling & Heating Type of Heating = 1 Central Heating

\*\*\*\*\*\*\*\*\*\*

SPACE SELECTION (see separate printout)

\*\*\*\*\*\*\*\*\*\*\*\*

# 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA

Operation Period			Therr Coolin	mostat ng	•	ooints Heating	•	Ventilation Dampers	
Occupied Unoccupied			75.0 75.0	-		68.0 F 68.0 F		OPEN OPEN	
Weekday Saturday Sunday Design Day	: 0 : 0	ccupied ccupied ccupied ccupied	Period Period	Begins Begins	at at	0;	Duration Duration Duration Duration	= 24 hrs = 24 hrs = 24 hrs = 24 hrs	

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# 4. SUPPLY, VENTILATION, RETURN AIR DATA

SUPPLY AIR

= 10000.00 CFM Supply air flow rate Heating supply temperature = 73.0 F

Fan operation for heating = 1 Continuous

VENTILATION AIR

Nominal ventilation flow rate = Minimum ventilation flow rate = 360.00 CFM 360.00 CFM

Damper leak rate = 5 % of vent air

RETURN AIR

Zone exhaust air flow rate = 0.00 CFM Zone exhaust fan power 0.0 kW Is a return plenum used ? N

## AIR SYSTEM DESCRIPTION

02-07-91 Name: #309 COMPUTER ROOM AHU 6100190202 Carrier Hourly Analysis Program Page 2 of 2 Prepared By : ENGG APPLICATIONS CONSUL \*\*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN 2:Forward curved Type = = 1.50 in wg Static Efficiency 54 % = = 1 Draw-thru Configuration RETURN FAN = 1: (Fan does not exist) Type \*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL (Not used) OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL (Not used) \*\*\*\*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050Type of supplemental heating = 0.050 = 0.050 \*\*\*\*\*\*\*\*\*

#### PLANT DESCRIPTIONS

Plant: #309 CHILLER 02-07-91 Prepared By : ENGG APPLICATIONS CONSUL 6100190202 Carrier Hourly Analysis Program Page 1 of 1 \* 1 PLANT NAME AND TYPES Class = Individual Plants Name = #309 CHILLER
Cooling Plant Type = Air Cooled Reciprocating
Heating Plant Type = Combustion Name \* 2 AIR SYSTEM SELECTION Air System Name Mult Air System Name #309 OFFICES AHU 1 #309 LAB AREAS AHU #309 SIMULATOR CHAMB AHU 1 #309 COMPUTER ROOM AHU \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 3a COOLING PLANT DATA (Air Cooled Reciprocating) Estimated maximum cooling coil load = 145.66 Ton Is an electronic expansion valve used ? N Capacity at 95.0 F outdoor air = 140.00 Ton Input power rate at 95.0 F outdoor air = 0.900 kW/Ton Type of cooling = Hydronic Is chilled water reset used Is hot gas bypass used ? Y Part load % for minimum unloading step 20 % One compressor per condenser circuit ? Y Are compressors cycled ? \* 3b HEATING PLANT DATA (Combustion) Estimated maximum heating coil load = 1525.80 MBH Fuel type = Fuel Oil Rated plant output = 1525.8 MBH Type of heating = Hydronic Is plant efficiency computer generated Seasonal plant efficiency \*\*\*\*\*\*\*\*\*\*\*\*\* 4 PUMP SYSTEM DATA Chilled water pumping system head = 65.00 ft wg Chilled water pumping system delta T = 8.00 F = 0.00 ft wg Hot water pumping system head Hot water pumping system delta T

\*\*\*\*\*\*\*\*\*\*\*\*

#### BUILDING DESCRIPTION

02-07-91 Building : BUILDING #309 Prepared By: ENGG APPLICATIONS CONSUL 6100190202 Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\* 1. BUILDING INPUTS BUILDING NAME = BUILDING #309 MISCELLANEOUS ELECTRIC 0.0 kW Maximum power Power schedule 1 DOMESTIC WATER HEATING Is a domestic how water system used Maximum hourly hot water use = 90.0 gal Hot water schedule = 65.0 F Average entering water temperature = 140.0 F Average hot water supply temperature = 2 : Combustion Heating plant type = 2 : Fuel Oil Fuel type 1444.5 MBH Plant capacity Is plant efficiency computer generated ? N 64 % Annual plant efficiency OTHER INPUTS Additional building floor area 2085.0 sqft Electrical generating efficiency 100.00 % \*\*\*\*\*\*\*\*\*\*\*\*\* 2. PLANT SELECTION Mult Plant Name Plant Name \_\_\_\_\_ 1 #309 CHILLER \*\*\*\*\*\*\*\*\*\*\*\*\*\* 3. FUEL & ELECTRIC RATE SELECTION

Fuel or Energy	No.	Name of Rate Schedule	Currency
Electric	10	ELECTRIC RATE (GENERIC)	MBTU
Natural Gas	6	NATURAL GAS (GENERIC)	MBTU
Fuel Oil	5	DOMESTIC FUEL OIL #2 (GENERIC)	MBTU
Propane	9	Empty	MBTU
Remote Source Heating	7	HEAVY FUEL OIL #6 (GENERIC)	MBTU
Remote Source Cooling	9	Empty	MBTU

\*\*\*\*\*\*\*\*\*\*\*

#### MONTHLY ENERGY COSTS

Building : BUILDING #309

Site : FORT BELVOIR, VIRGINIA

OIR, VIRGINIA 6100190202

02-07-91

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program Page 1 of 1

TABLE 1. HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	Remote Cooling
Jan	160	0	1,229	0	0	0
Feb	145	0	1,081	0	0	0
Mar	171	0	1,038	0.	0	0
Apr	196	0	830	0	0	0
May	234	0	731	0	0	0
June	260	0	603	0	0	0
July	301	0	579	0	0	0
Aug	289	0	599	0	0	0
Sept	246	0	686	0	0	0
Oct	215	0	820	0	0	0
Nov	182	0	947	0	0	0
Dec	163	0	1,158	0	0	0
Tot.	2,562	0	10,301	0	0	0

TABLE 2. NON-HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	
Jan	131	0	7	0	0	
Feb	119	0	6	0	0	
Mar	137	0	7	0	0	
Apr	130	0	7	0	0	
May	136	0	7	0	0	
June	130	0	7	0	. 0	
July	131	0	7	0	0	
Aug	141	0	7	0	0	
Sept	121	0	6	0	0	
Oct	141	0	7	0	0	
Nov	130	0	7	0	0	
Dec	127	0	6	0	0	
Tot.	1,576	0	81	0	0	

\*\*\*\*\*\*\*\*\*\*\*

#### FUEL OIL COSTS

Building : BUILDING #309

Site : FORT BELVOIR, VIRGINIA

02-07-91 6100190202

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*

Page 1 of 1

TABLE 1. MONTHLY COMPONENT CHARGES (MBTU)

Month	Energy Charges	Fixed Charges	Taxes	Total Charges
Jan	1,236	0	0	1,236
Feb	1,087	0	0	1,087
Mar	1,046	0	0	1,046
Apr	837	0	0	837
May	738	0	0	738
June	610	0	0	610
July	585	0	0	585
Aug	607	0	0	607
Sept	692	0	0	692
Oct	827	0	0	827
Nov	954	0	0	954
Dec	1,164	0	0	1,164
Tot.	10,382	0	0	10,382

TABLE 2. MONTHLY TOTALS

Month	Charges (MBTU)	Energy (Gallon)	Effective Rate (MBTU/Gallon)
Jan	1,236	8,908	0.13870
Feb	1,087	7,838	0.13870
Mar	1,046	7,538	0.13870
Apr	837	6,032	0.13870
May	738	5,319	0.13870
June	610	4,399	0.13870
July	585	4,221	0.13870
Aug	´ 607	4,373	0.13870
Sept	692	4,990	0.13870
Oct	827	5,962	0.13870
Nov	954	6,878	0.13870
Dec	1,164	8,395	0.13870
Tot.	10,382	74,855	0.13870

\*\*\*\*\*\*\*\*\*\*\*\*\*

THE SIMULATIONS ESTIMATED HEATING LOAD (1525,8 MBH)
IS WORST CASE CONDITION AND PROBABLY OCCURES
DURING JANUARY. THIS LOAD ONLY REPRESENTS THE
SYSTEMS SIMULATED WHICH REQUIRE SUMMER STEAM,

SINCE THE NEW LOCAL BOILER WILL ONLY BE NEEDED FROM MID APRIL THRU MID OCTOBER WE WILL NOT NEED AS LARGE A BOILER LOAD AS INDICATED BY THE COMPUTER SIMULATION.

IF WE TAKE THE AVERAGE MBTU FOR DAYS IN APRIL (WORST CASE) AND ADD 20% AS A SAFETY FACTOR THE RESULTANT LOAD WILL BE SUFFICIENT TO SELECT A LOCAL STEAM BOILER TO ACCOMMODATE THE BUILDINGS STEAM REQUIREMENTS DURING THE SUMMER.

SUMMER STEAM

AVA. MBTU/DAY

APR 27.9 ←

27.9/24 = 1.1625 MBTU x 1.Z =

1395 MBH MAX EST LOLD

MAY 23.8

JUNE 20.33

JULY 18.87

10101

Aug.

19.58

SEPT.

23.06

OCT.

26.67

SELECT: PEERLESS SERIES 7 FDA INDUSTRIAL/COMMERCIAL

CAST IEON BOILER/BURNER UNIT

MODEL 715 FDA SU, 56 Bhp, 14 " & VENT, 15 SECTIONS OVERALL EFFICIENCY W/PIPING LOSSES & PICKUP = 64 %
INPUT @ 16.4 GPH # 2 = 2274.7 MBH (CORRECTED)

CORRECTED NET OUTPUT = 1444.5 MBH

+ 81 "L × 35" W X 60"h (2)4" \$(1)3" SUP TAPS (2) 3" RET TAPS

MONTHLY MBTU EXPENDED FOR SUMMER REHEAT AND DOMESTIC HOT WATER GENERATION AS SIMULATED BY CARRIER E-20 COMPUTER PROGRAM.

APR.	837/2	=	418,5 MBTU	3016 GALS
MAY.		=	738	5319
JUNE		=	610	4.399
JULY	t	=	585	4221
AUG.		=	607	4373
SEPT.		=	692	4990
OCT.	827/2	=	413.5	2981
		•	4064 MBTU	29,299 GALS

SELECT: 5000 GAL OIL STORAGE TANK

8'4 x 13'-4'

COMPUTER SIMULATED MAX. EST. HTG. LOAD = 1525.8 MBH

LIAN MBTU = 1236

APR METU = 837

837 / 1236 = .6771 X 1525.8 = 1033.25 MEH

LAN EXPENDED MBTU = 1236/31 = 39.87 HBTU/DAY AVG
39.87 /24 = 1.661 MBTU/HR AVG

1661 1525.8 - 1.088 AVG MBTU/HR 15 8.8% ABOVE SIMULATED MAX LOLD?

USE 1395 MBH AS MAX GROSS BLOG \$ 515.
LOAD FOR A NEW PLANT ECO.

CONSTRUCTION COST	ESTU	MATE	:	DATE PREPARED	1991		^6
PROJECT CONSTRUCTION COST	E3 ! !!	MAIL	-	FEB		SHEET OR ESTIMATE	OF
ENERGY SAVINGS	OPPO	RTU	YTIU	SURVEY		CODE A (No desig	n completed)
FT. BELVOIR, VIR	GINIA		BLDG	309 :1		DOE D (Preliminary	dasign)
ARCHITECT ENGINEER ENGINEERING APPLI	CATION	j5 <i>4</i>	CONSU!	TANTS	□ 07	THER (Specify)	
DRAWING NO.  OIL FIRED LP STEAM BOIL		ESTIM	ATOR E	EF		CHECKED BY	
	QUANT			LABOR		MATERIAL	
SUMMARY	NO. Units	UNIT MEAS.	PER UNIT	TOTAL	PER .	TOTAL	COST
BOILER HOUSE ADDITION	144	15F	23.	3312	14.	5328	8640
PREPARE SITE		15		2000		700	2700
OIL FIRED LP STEAM BOILER	1	EA		2700		11,350	14050
5000 GAL OIL STOR, EQUIP.		15		8766		15,713	24,479
MISC HOOK-UP COSTS		LS		253		314	567
VENT CHIMNEY 14"\$	EA	LF	8.35	251	75.60	2268	2519
FITTINGS, FLASHING, TOP, Etc		LS		126		2087	2213
AUTO DRAFT REGULATOR	1	EA		20		232	252
STEAM PIPING, FITTINGS, VALVES, Etc.		15		2776		1321	4097
CONDENSATE PIPING, TRAPS ETC	-	72		649		898	1547
RETURN FEEDWATER SYSTEM		15		880		574	1454
ELECTRICAL LIGHTING & POWER	144	SF	3.70	535	5,50	792	1327
SUB-TOTAL				22,268		41,577	63,845
LABOR MARKUP 21%	······································			4,676		-	4,676
TAXES 45%				_		1,871	1,871
SUB-TOTAL	<del> </del>			26,944		43,448	70,392
OVERHEAD 10%				2,694		4,345	7,039
SUB-TOTAL	<del>, , , , , , , , , , , , , , , , , , , </del>	·		29,638		47,793	77,431
PROFIT 10%				2964		4,779	7,743
SUB-TOTAL				32,607		52,572	85, 174
	<del> </del>			-			
TOTAL						SAY	85,175

# OIL STORAGE

•		REQD,	-		UNDERGI		•	
					LISTED, W/			DIECTION
	••					T		· · · · · · · · · · · · · · · · · · ·
IBZ.	5000 GAL	TANK		755	8000	8755	8 x 13'-4"	L
		HOLD DNS				513		•
		PIPING			2.11 ,50	7.29		
		PIPING				21,00		-
		FOOT VALVE	•	15.25	52.50	67.75		
		PUMP		59	_395	454,		
			-	79	715.	794.		· • • • • • • • • • • • • • • • • • • •
		VALVES		8.25		16.		
		SHUT OFFS		19.80	11,75	31.55	-	
		PAD CY			94.	119		
		VATION CY			_		·	
		MANWAY.	• ,	<b>-</b>	400	400		
8		DEMO PAV			9.27	93.		
				8,766	13,383	22,149		
					<u> </u>			
	161	V DETECT	TION S	HKTELA		<u></u>		
					725		····	
					760			
		1.0000.2	TANK W		650			
		CABLE & TR			195			
		YAYTR YIN				•		
· · · ·	PT	TIONAL LEA	K DET		= 2330			
	·			8766	15,713	- 24,	479	
4								

	L	M	.T	 	w ·
) str 14 " \$	8,35	75.6	83.95		
45° ELL	16,70	250	266.70		
90° tee	19,50	285	304.50		
T. SUPPORT	21.	152	173,		
OF THIMBLE	21.	345	366.		
of Sup. Assem.	22.	480	502.		-
STACK CAP	1.50	325	334.50		
				•	
	377.	4355.	4732.		
			-		* *

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e de la companya del companya de la companya de la companya del companya de la co

## OIL HOOK-UP

•	<u>.</u>	253	314	567	
<b>Y</b>	FILL CAP	6110	7,50		and the second and the second
•	DAMPERS (2)		•		
					= <b>5</b> .9 <del>/</del>
✓	LOUVERS (2)	7.20	24.	31.20	2,274,700 /4000 = 568 ×15= 851/HA
/	2" STL V.P. (201)	6.25	4.08,67	11.00	
✓	TUBE (12')	2.53	1.28	3.81	
<b>V</b> .	2" VENT CAP	6.20	7.50	13.70	and the second of the second o
<b>V</b>	VALVE	16.50	8,60	25.00	(x,y) = (x,y) + (x,y
	VALVE	8.25	4.25	12.50	and the second s
<b>✓</b>	FILTER	9,90	9.95	19.95	
		L	M	T	

# STEAM VALVES, PIPING, FITTINGS, VALVES Etc.

				** * * * * * * * * * * * * * * * * * *	•	
		. <b>L</b>	. M	. <b>T</b>		
132	(2) 4"STM. VALVES OS 4 Y	120	215	335		- · ·
<b>.</b> .	BOILER BRAIN	5,80	11.90	17.70		
87	4" PIPING (35')	9.60	6.77 1.03	17,40		
	3" PIPING (10')	8.25	4.69 .69	13.83	4.4	
	PIPING ( )		a company of the second			
110	4" WN/FLAUGE (B)	· 36.	14.80 3.82	54.62		
105	4" 90°EU (8)	71	M.90 7.65	93.55		
	4" TEE (2)		27. 17.75	159.75		
	3" WN/F (1)		14,10 2.73	41.83	*	
		51	9 545	65.45		
					ng panala pa	
		1888	1226	3114.		
	4" WELDING JOINTS (18)	36	5.62	39.82		
_	3" _ " (8.)	30	3.18	33.18		
		2776	1321			
	CONDENSATE PIPI	NG , TRAPS _			The state of the s	
		 		T		
	PIPING ()					
203	TRAP ASSEMBLY (	_				
	WELDIUG LABOR 8	•		24,39		
		473	879	1352		
		-	898			
	The second of th					
	RETURU FEEDWAT					
		L	M	Τ		

PIPING (50')

VALUE

MISC FITTINGS

358 280 638

WELDING UBOR (10) 22 239 24.39

EDUTROL CHANGE 300 304 884

270 570

880 309.39

**BUILDING 317** 

#### DESIGN PARAMETERS, SHGs

Location : FT. BELVOIR, VIRGINIA
Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program Page 1 of 1

10-17-90

6022890201

#### DESIGN WEATHER PARAMETERS

TABLE 1. MAXIMUM SOLAR HEAT GAINS - AVERAGE DAYS
(BTU/hr/sqft)

Month	NE	E	SE	s	SW	W	NW	N	Hor
Jan	24.2	61.1	97.3	110.1	97.3	61.1	24.2	24.2	80.0
Feb	31.8	74.8	105.7	113.8	105.7	74.8	31.8	31.8	107.2
Mar	40.8	87.0	106.9	108.0	106.9	87.0	40.8	40.8	136.8
Apr	60.0	97.4	104.4	97.2	104.4	97.4	60.0	49.3	164.3
May	74.9	103.0	98.4	84.0	98.4	103.0	74.9	54.9	181.8
Jun	85.1	109.3	97.5	79.2	97.5	109.3	85.1	57.9	195.2
Jul	80.6	106.7	98.1	81.4	98.1	106.7	80.6	56.4	189.3
Aug	69.1	104.1	105.7	94.4	105.7	104.1	69.1	52.2	177.6
Sep	52.3	99.3	114.8	111.6	114.8	99.3	52.3	45.4	158.1
Oct	36.4	88.3	117.7	122.9	117.7	88.3	36.4	36.4	128.2
Nov	26.7	66.5	101.8	113.3	101.8	66.5	26.7	26.7	89.4
Dec	21.4	53.0	87.6	100.9	87.6	53.0	21.4	21.4	68.4

TABLE 2. MAXIMUM SOLAR HEAT GAINS - DESIGN DAYS
(BTU/hr/sqft)

Month	NE	<b>E</b>	SE	s	SW	W	NW	N	Hor
Jan	20.4	158.9	243.9	253.8	243.9	158.9	20.4	20.4	142.0
Feb	53.0	189.1	246.5	237.5	246.5	189.1	53.0	24.7	187.7
Mar	95.9	219.8	234.5	200.7	234.5	219.8	95.9	29.4	229.0
Apr	141.6	224.4	200.1	146.7	200.1	224.4	141.6	34.1	256.0
May	166.1	220.1	170.7	104.6	170.7	220.1	166.1	37.4	268.0
Jun	173.2	215.4	156.7	87.8	156.7	215.4	173.2	47.4	269.7
Jul	163.7	215.7	166.5	101.4	166.5	215.7	163.7	38.3	264.7
Aug	136.4	216.6	193.1	141.7	193.1	216.6	136.4	35.8	251.3
Sep	90.3	207.2	224.7	194.9	224.7	207.2	90.3	30.6	221.4
Oct	52.0	182.7	238.2	230.6	238.2	182.7	52.0	25.5	184.4
Nov	20.7	156.1	239.8	249.9	239.8	156.1	20.7	20.7	141.3
Dec	18.5	141.9	236.4	254.2	236.4	141.9	18.5	18.5	122.2

#### MASTER SCHEDULE SUMMARY

Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program

Page 1 12-14-90 

MASTER SCHEDULE SUMMARY

Page 2 12-14-90

Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program

6100190202

MASTER SCHEDU	ILE 4	. DOM	ESTIC	HOT	WATER		Hou	rly P	ercen	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	13
Weekday	0	0	0	0	0	5	10	10	20	20	20	80
Saturday	0	0	0	0	0	2	2	2	5	5	5	5
Sunday	0	0	0	0	0	0	0	2	2	2	2	2
DESIGN	0	0	0	0	0	5	5	20	20	20	20	80
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
 Weekday	80	20	20	20	10	10	5	5	5	2	0	(
Saturday	5	5	5	2	2	2	2	2	0	0	0	(
Sunday	2	2	2	2	2	2	0	0	0	0	0	
DESIGN	80	20	20	20	10	10	5	5	5	2	0	

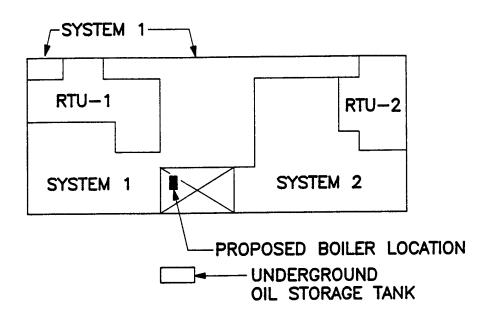
DAY TYPE DATA

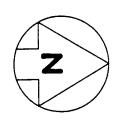
Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program 6022890201

Page 1 10-01-90 6022890201

Month	DAY TYPE 1 Weekday	DAY TYPE 2 Saturday	DAY TYPE 3 Sunday	Total Days/Month
 January	21	1 4	6	31
February	19	4	5	28
March	22	5	4	31
April	21	4	5	30
May	22	4	5	31
June	21	5	4	30
July	21	4	6	31
August	23	4	4	31
September	19	5	6	30
October	23	4	4	31
November	21	4	5	30
December	20	5	6	31





FLOOR PLAN

BUILDING 317 KEY PLAN

## ENGINEERING ANALYSIS

		Sheet	: of
		Ву: _	REF
	Calculations for Infil	teration	
	Building 31	ר	
Project: ESOS, Fort E	BELVOIR	Date: SEPT	1990
Contract No: DACA-31-89	-C=0189 EAC Projec	t No.: 89034.0	
Calculations based on 2	ASHRAE 1989 Page F 2.3.1	4.	
Building Leakage Area			
	Effective Leakage Area, in <sup>:</sup>	Building Component Parameter	Building Leakage Area D <sub>i</sub> L <sub>i</sub> , in <sup>2</sup>
	L,	$\mathbf{D}_{i}$	L
Sill foundation Joints, ceiling/wall Windows Doors Wall - Window frames - Door frames Elec. outlet/switch Recessed lights Pipe penetration Exhaust fans Duct penetration FCU openings	0.19/ft. of perimeter 0.12/ft. of wall 0.063/ft². of window 0.215/ft². of doors 0.15/ft². of door 0.072/ft². of door 0.16/fixture 1.6/fixture 1.55/in². of pipe 6.0/fan 2.2/SF 60 x 1/3(SF/unit) x 2.2	567 ft. 567 ft. 568 ft. 568 ft. 569 ft. 100 ft. 222 ft. 25 ft. 4487	107.8 68.1 27.6 3.4 27.6 7.6 17.7 355.5 159.8 1596.8 1729.9 1729.9 1729.9
Infiltration Q(cfm) = L	$x (A \Delta t + Bv^2)^{1/2}$		(ASHRAE 1989, P. 23.17, EQ.33)
<u>Winter</u>	Summe	<u>er</u>	-
Q(cfm)= = L(0.01313 x 51 + 0.01 = L x 2.2 = 1730 x 2.2 = 3806 CFM  Rate = $\frac{3806}{16,420}$ = 0.23 CFM	· •	= L x 1.45 = 1730 x 1.45 Rate = 2509	= 2509 CFM = 0.15 CFM/SF
.2, .22	,	10,720 -	Gill Gray Gr

	: KIU-	I NC-	ll L					TO.	-01-90
Prepared By	: ENG	G APPL	CATIONS	CONSUI	L			60228	390201
Carrier Hou	rlv An	alvsis	Program					Page :	
*****	****	*****	****	*****	******	*****	*****	****	****
•	Wal	ls	Roof	Glas					
U-Value :	0.0	63	0.090	1.06	50 Bui	lding V	Weight	: M	
Weight :			L		Gla	ss Fact	cor	: 1.00	
Color :		D	D		Int	ernal S	Shades	? 1	<b>V</b>
People : s	sqft/pe	rson	= 0.0	) Sche	edule =	1 A	ctivity	Level :	= 2
Lights : W	N/sqft		= 2.08	Sche	edule =	4 Wa	attage M	ult.	= 1.20
: F	fixture	Type	= :	l Reces	ssed, not	vente	1		
SPACE NAME	= RT								
					Floor	Area	:	231.0	sqft
Exposure	:		W		E Roof				
Wall Area				0.	.0 Curre	nt			_
Glass Area	•	0.	.0	0.	.O Eleme	nts	: W1,E	l,In,Gr	
******	*****	****	****	****	******	*****	*****	*****	****
ADDITIONAL	ELEMEN	T - Wal	11						
								w	
Weight	=	н	(TD\RdI)	<b>こ</b> )	Expos	ure	=	W	
Weight Color	=	H D	(ID/sdI)	=)	Net A	ure rea	=	180.0	gft
Color U-Value	=	0.059	BTU/hr/	sqft/F				180.0	
Color U-Value ********** ADDITIONAL W/sqft Total Wat Schedule	= ****** ELEMEN  ts No.	0.059 ****** T - Otl	BTU/hr/	sqft/F 				180.0	
Color U-Value  ************* ADDITIONAL  W/sqft Total Wat Schedule  **********	= ****** ELEMEN  ts No.	0.059 ****** T - Otl	######################################	aqft/F	******	*****	*****	180.0	****
Color U-Value  *********** ADDITIONAL  W/sqft Total Wat Schedule  ************ ADDITIONAL	ELEMEN No. ELEMEN	0.059 ****** T - Otl	######################################	*******  *******	******	*****	*****	180.0	****
Color U-Value  **********  ADDITIONAL  W/sqft Total Wat Schedule  *********  ADDITIONAL  Cooling	ELEMEN No. ELEMEN  ******* ELEMEN	0.059 ****** T - Oth	BTU/hr/s ******* her Elect 4.40 1,016 3 ******** filtration	agft/F	******	*****	*****	180.0	****
Color U-Value  **********  ADDITIONAL  W/sqft Total Wat Schedule  **********  ADDITIONAL  Cooling Heating	ELEMEN No. ELEMEN ELEMEN O. ELEMEN O. ELEMEN	0.059  ****** T - Otl  = = T - In:	BTU/hr/s *******  ner Elect  4.40 1,016 3  ******* filtration  M/sqft  M/sqft	agft/F	******	*****	*****	180.0	****
Color U-Value  **********  ADDITIONAL  W/sqft Total Wat Schedule  *********  ADDITIONAL  Cooling	ELEMEN No. ELEMEN ELEMEN O. ELEMEN O. ELEMEN	0.059  ****** T - Otl  = = T - In:	BTU/hr/s ******* her Elect 4.40 1,016 3 ******** filtration	agft/F	******** ********	*****	*****	180.0	****
Color U-Value  ************* ADDITIONAL  W/sqft Total Wat Schedule  *********** ADDITIONAL  Cooling Heating Typical  ***********************************	=	0.059  ****** T - Oth  = =  ****** T - In: .15 CFN .23 CFN .19 CFN	######################################	sqft/F ****** cric	******** ********* 35 CFM 53 CFM	*****	*****	180.0	****
Color U-Value  **********  ADDITIONAL  W/sqft Total Wat Schedule  **********  ADDITIONAL  Cooling Heating	=	0.059  ******  T - Oth  = = = ******  T - In: .15 CFI .23 CFI .19 CFI .19 CFI	######################################	######################################	******** 35 CFM 53 CFM 44 CFM	*****	*****	180.0	****
Color U-Value  ***********  ADDITIONAL  W/sqft Total Wat Schedule  *********  ADDITIONAL  Cooling Heating Typical  **********  ADDITIONAL	ELEMEN  CONTRACTOR OF Area	0.059  ******  T - Oth  = = =  ******  T - Inf  .15 CFI  .23 CFI  .19 CFI  ******	BTU/hr/s  *******  ner Elect  4.40 1,016 3  *******  filtratio  M/sqft  M/sqft  ********  ound	sqft/F ****** cric	********* 35 CFM 53 CFM 44 CFM	*****	*****	180.0	*****

Space Name :	RTU-1 HC		SPACE DESC	CRIPTION	10-01-90
Prepared By			CONSUL		6022890201
Carrier Hour					Page 1 of 1
******	******	*****	*****	****	
	Walls	Roof	Glass		
U-Value :				Building Weight	: M
Weight :				Glass Factor	: 1.00
Color :				Internal Shades	? N
	_	_			
People : so	ft/person	= 0.	O Schedule	= 1 Activity	Level = 2
Lights : W/	saft.	= 3.2	7 Schedule	e = 1 Activity e = 2 Wattage	Mult. = 1.20
: Fi:	xture Type	. =		, not vented	
SPACE NAME	= RTU-1	HC-3 B			
			1	Floor Area :	440.0 sqft
Exposure	:	S	E	Roof Area :	440.0 sqft
Exposure Wall Area	: 33	0.0	0.0	Current	
Glass Area				Elements : El,	In,Gr
*****		******		*****	
ADDITIONAL E	LEMENT - O	ther Elec	tric		
W/sqft	=	5.00			
Total Watt					
Schedule No		3			
*****	*****	*****	******	*****	*****
ADDITIONAL E	LEMENT - I	nfiltrati	on		
Cooling	: 0.15 C	FM/saft	= 66	5 CFM	
Heating	: 0.23 C	FM/sqft	= 10:	l CFM	
Typical	: 0.19 C	FM/sqft		4 CFM	
-			*****	*****	*****
*****	*****				
ADDITIONAL E	********* LEMENT - G	round			
ADDITIONAL E					
		=			
Slab Floor		=			

		SIMPLE		10 01 00
Space Name :				10-01-90
Prepared By			CONSUL	6022890201
Carrier Hour	ly Analys	sis Program		Page 1 of 1
******			******	*****
	Walls	Roof	Glass	
U-Value :	0.059	0.090	1.060 Building Weight	: M
Weight :	н	L	Glass Factor	: 1.00
Color :			Internal Shades	3 N
People : sq	[ft/person	n = 460.0	Schedule = 1 Activity	Level = 2
Lights : W/	sqft	= 3.13	Schedule = 2 Wattage	Mult. $= 1.20$
: Fi	xture Typ	e = 1	Recessed, not vented	
SPACE NAME		HC-5 D		
			Floor Area :	460.0 <b>s</b> qft
Exposure	:	S	E Roof Area :	460.0 sqft
Wall Area	:		0.0 Current	
Glass Area	:	0.0	0.0 Elements : El	In,Gr
******	*****	*****	******	*****
ADDITIONAL E	LEMENT -	Other Elect	ric	
W/sqft	=	3.50		
Total Watt	:s =	1,610		
Schedule N	io. =	3		
ADDITIONAL E				
Cooling	: 0.15	CFM/sqft =	69 CFM	
Heating	: 0.23	CFM/saft =	106 CFM	
Typical		CFM/sqft =		
-75				
*****	********* CLEMENT -		******	*****
ADDITIONAL E				
ADDITIONAL E	: Area	= 4	60.0 sqft	
	: Area		60.0 sqft 0.0 ft	

Space Name: RTU-1 H Prepared By: ENGG AP Carrier Hourly Analys	PLICATIONS ( is Program		******	10-01-90 6022890201 Page 1 of 1
Walls U-Value: 0.059 Weight: H Color: D	Roof 0.090 L D	Glass 1.060	Building Weight Glass Factor Internal Shades	: 1.00
People : sqft/person Lights : W/sqft : Fixture Typ	= 3.13	Schedule	e = 1 Activity e = 2 Wattage P not vented	Level = 2 Mult. = 1.20
SPACE NAME = RTU-1  Exposure : Wall Area : Glass Area : ************************************	HC-9 H  S 0.0 0.0 ****************************	E F 0.0 C 0.0 F	Ploor Area : Roof Area : Current Elements : El,	
W/sqft = Total Watts = Schedule No. =	5.32			
**************************************			******	*****
Cooling : 0.15 Heating : 0.23 Typical : 0.19		72	CFM CFM CFM	
**************************************		*****	*****	*****
Slab Floor Area Perimeter Depth	= 3: = =	12.0 sqft 0.0 ft 1.0 ft		

10-01-90 Space Name: RTU-1 HC-8 G 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.059 0.090 1.060
Weight: H L
Color: D D Building Weight : M Glass Factor : 1.00 Internal Shades ? N People : sqft/person = 460.0 Schedule = 1 Activity Level = 2 Lights : W/sqft = 3.13 Schedule = 2 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented SPACE NAME = RTU-1 HC-8 G Floor Area : 216.0 sqft Exposure : S
Wall Area : 0.0
Glass Area : 0.0 E Roof Area : 216.0 sqft 0.0 Current
0.0 Elements : El,In,Gr \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric W/sqft = 6.30Total Watts = 1,361 Schedule No. \*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration \_\_\_\_\_\_ Cooling : 0.15 CFM/sqft = 32 CFM Heating : 0.23 CFM/sqft = 50 CFM Typical : 0.19 CFM/sqft = 41 CFM Heating : 0.23 CFM/sqft = Typical : 0.19 CFM/sqft = \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Ground Slab Floor Area = 216.0 sqft Perimeter = 0.0 ft 1.0 ft Depth

				ESCRIPTION			
Space Name :	: RTU-1 F	HC-7 F				1	.0-01-90
Prepared By	: ENGG A	PPLICATION	IS CONSUL			602	2890201
Carrier Hour						Page	1 of 1
******				*****	*****		
	Walls	Roof	Glass				
U-Value :			1.060	Buildi	ng Weight	•	м
Weight :	H	L	1.000		Factor		
_	D D				al Shades		
color :	U	D		Intern	al Shades	•	74
Boonlo . sc	-ft /202501	- 0	O Schod	.10 - 1	Activity	Lovel	= 2
People : so	irc/bereor	. – ,	FO Sched	nie – 1	Wetter 1	TEAET	= 1.20
Lights : W/						uit.	- 1.20
: F3	exture Typ	)e =	T Kecesse	ed, not ve	ntea		
SPACE NAME	_ DMII_1		·				
SPACE NAME	= R10-1	nc-/ F		Floor Av	ea :	301	O soft
Punasuus	_	s	T-0	Roof Are			0 sqft
Exposure					a ;	304.	O BQIL
Wall Area				Current	_,		
Glass Area	:	0.0			: El,		
*****	******			*****	*****	*****	*****
ADDITIONAL E	ELEMENT -	Other Ele	ctric				
W/sqft	=	4.40					
Total Watt		1,690					
Schedule N		1,090					
Schedule v	10. =	3	•				
**********			*******		******		
				*****	*****	*****	*****
**************************************				*****	******		*****
ADDITIONAL E	ELEMENT -	Infiltrat	ion		******	*****	*****
ADDITIONAL E	ELEMENT -	Infiltrat CFM/sqft	ion =	58 CFM	******	*****	*****
ADDITIONAL E	: 0.15 : 0.23	Infiltrat CFM/sqft CFM/sqft	ion = =	58 CFM 88 CFM	******	*****	*****
ADDITIONAL E	: 0.15 : 0.23	Infiltrat CFM/sqft	ion = =	58 CFM	*****	*****	*****
ADDITIONAL E	: 0.15 : 0.23	Infiltrat CFM/sqft CFM/sqft CFM/sqft	ion = = =	58 CFM 88 CFM 73 CFM			
Cooling Heating Typical	: 0.15 : 0.23 : 0.19	Infiltrat CFM/sqft CFM/sqft CFM/sqft	ion = = =	58 CFM 88 CFM 73 CFM	*****		
ADDITIONAL E	: 0.15 : 0.23 : 0.19	Infiltrat CFM/sqft CFM/sqft CFM/sqft	ion = = =	58 CFM 88 CFM 73 CFM			
Cooling Heating Typical ******************ADDITIONAL E	: 0.15 : 0.23 : 0.19	Infiltrat CFM/sqft CFM/sqft CFM/sqft CFM/sqft	ion = = = ********	58 CFM 88 CFM 73 CFM			
Cooling Heating Typical ************ ADDITIONAL E	: 0.15 : 0.23 : 0.19	Infiltrat  CFM/sqft CFM/sqft CFM/sqft  CFM/sqft  T*********** Ground	ion = = = = *********	58 CFM 88 CFM 73 CFM			
Cooling Heating Typical ******************ADDITIONAL E	: 0.15 : 0.23 : 0.19	Infiltrat CFM/sqft CFM/sqft CFM/sqft CFM/sqft	ion = = = ********	58 CFM 88 CFM 73 CFM			

	D		E SPACE DE	SCRIPTION		10	0-01-90
Space Name :							2890201
Prepared By							1 of 1
Carrier Hour:	ly Analys	sis Progra	.m			Page	1 01 1
*****				****	*****		
			Glass			-	. =
U-Value :	0.059				g Weight		
Weight :	н	L			actor		
Color :	D	D		Interna	l Shades	?	N
People : sq	ft/persor	n = 150	.0 Schedu	le = 1	Activity	Level	= 2
Liahts : W/:	sqft	= 2.	13 Schedu	le = 2	Wattage 1	Mult.	= 1.20
: Fi	kture Typ	e =	1 Recesse	d, not ven	ted		
SPACE NAME	= PTH-2	HC-12 M	NWCORNER				
BIACE NAME	- 1110 2			Floor Are	a :	300.	0 saft
Exposure		w	N	Roof Area			0 sqft
Exposure Wall Area	•	75 O					
				Elements	• F1 ·	In Gr	
Glass Area *******		0.0		PIEMENCE			
ADDITIONAL E							
W/sqft		3.50					
Total Watt	g =	1,050	)				
Schedule N	o. =	3	)				
******	 *******	******	******	******	*****	*****	******
ADDITIONAL E	LEMENT -	Infiltrat	ion				
Cooling	: 0.15	CFM/sqft	=	45 CFM			
Heating	: 0.23	CFM/sqft	=	69 CFM			
Typical	: 0.19	CFM/sqft	=	57 CFM			
*******	*****		*****	*****	*****	*****	*****
ADDITIONAL E	LEMENT -	Ground					
ADDITIONAL E			300.0 sqi	:			
			300.0 sqi 37.0 ft	:t			
Slab Floor		=	_	it			

Space Name	יויים פ			CRIPTION	10-01-90
		APPLICATION:	S CONSIII.		6022890201
		sis Progra			Page 1 of 3
carrier no			.u 		. rage 1 OI
	Walls	Roof	Glass		
U-Value :		0.090		Building Weight	• w
	0.039 H	U.090 L	1.000	Glass Factor	
Weight : Color :	D D	D T		Internal Shades	
COLOI :	D	D		Internal Shades	• 4
People :	saft/perso	on = 0	.0 Schedu]	e = 1 Activity	v Level = 2
Lights :	W/saft	= 1.	60 Schedul	e = 2 Wattage	Mult. = 1.20
		rpe =		, not vented	
SPACE NAME	= RTU-2	HC-13 N			
				Floor Area :	798.0 sqft
Exposure		W		Roof Area :	798.0 sqft
Wall Area	:	0.0		Current	
Glass Area	:	0.0		Elements : El	
*****		*****		*****	*****
ADDITIONAL	ELEMENT -	Other Ele	ctric		
**/64		4.40			
W/sqft					
	tts =	: 3,510 : 3			
Schedule	NO. =				
*****	*****	*****	*****	*****	*****
ADDITIONAL	ELEMENT -	· Infiltrat:	ion		
Cooling	: 0.15	CFM/sqft	= 12	0 CFM	
		CFM/sqft		4 CFM	
Typical		CFM/sqft		2 CFM	
<b>.</b>					
******	******	*****	*****	*****	*****
ADDITIONAL.	ELEMENT -	Ground			
		=	798.0 sqft		
Slab Flo					
		=	38.0 ft 1.0 ft		

Space Name :	RTU-2 H	C-15 P			10-01-90
Prepared By			CONSUL		6022890203
Carrier Hour	ly Analys	is Program			Page 1 of :
*******	*****	*****	*****	*****	*****
		Roof	Glass		
U-Value :			1.060 Bu	ilding Weight	: M
Weight :			G1	ass Factor	: 1.00
Color :	D	D	In	ternal Shades	? N
People : sq	ft/person	= 0.0	Schedule	= 1 Activity	Level =
Lights : W/	sqft	= 3.10		= 2 Wattage 1	fult. = 1.20
: Fi		e = 1	Recessed, no	t vented	
SPACE NAME					
					415.0 sqft
Exposure		W		Area :	415.0 sqft
Wall Area	:	0.0	0.0 Curr		
Glass Area	•	0.0	0.0 Elem	ents : El,	[n,Gr
				*****	****
ADDITIONAL E	LEMENT -	Other Elect	ric		
W/sqft		5.00			
Total Watt		•			
Schedule N	o. =	3			
*****	 *******	*****	******	*****	*****
ADDITIONAL E	LEMENT -	Infiltratio	n		
Cooling	: 0.15	CFM/sqft =	62 CF	'M	
Heating	: 0.23	CFM/sqft =	95 CF	M	
Typical	: 0.19	CFM/sqft =	79 CF	M	
*****	******	*****	******	****	*****
	LEMENT -	Ground			
ADDITIONAL E					
ADDITIONAL E	Area	= 4	15.0 sqft		
	Area		15.0 sqft 0.0 ft		

Space Name :	ATT A #1						
							-01-90
Prepared By			CONSUL				390201
Carrier Hour	cly Analys	is Program				Page :	
*****	****	*****	*****	*****	****	*****	****
	Walls						
U-Value :	0.059	0.090	1.060	Building '	Weight	: M	
		L D		Glass Fac	tor	: 1.00	)
Color :	H D	D		Internal	Shades	? 1	1
People : so	ift/person	= 200.0	) Schedu	le = 1 A	ctivity :	Level :	= 2
Lights : W/	/sqft	= 4.00	) Schedu	le = 2 W	attage M	ult. :	= 1.20
	ixture Typ			d, not vente			
SPACE NAME	= SYS #1	25 SE CO	DRNER				
				Floor Area	:	210.0	sqft
Exposure Wall Area	:	s	E	Roof Area	:	210.0	sqft
Wall Area	: 2	85.0	165.0	Current			
Glass Area	:	0.0	0.0	Elements	: El,I:	n,Gr	
******	*****	*****	*****	*****	*****	*****	****
ADDITIONAL F	CLEMENT -	Other Elect	:ric				
W/sqft		11.86					
Total Watt	:s =	2,490					
Schedule N	No. =	3					
						*****	 *****
	*****	****	******	****			
**************************************				****			
ADDITIONAL E	ELEMENT -	Infiltratio	on				
ADDITIONAL E	ELEMENT - : 0.15		on  =				

		SIMPLE	SPACE DES	CRIPTION		
Space Name :	SYS #1 E	NTRY AREA			-	10-01
Prepared By	: ENGG APP	LICATIONS	CONSUL			6022890
Carrier Hour						Page 1 o
******			*****	*****	******	*******
	Walls	Roof	Glass			
U-Value :	0.059	0.090	1.060	Buildin	g Weight	: M
Weight :	Н	L			actor	
Color :	D	<u>п</u>			l Shades	
	_					
People : sq	ft/person	= 0.0	Schedul	e = 1	Activity :	Level =
Lights : W/	soft	= 0.59	Schedul	e = 2	Wattage M	ult. = 1
	xture Type					
SPACE NAME	= SYS #1	ENTRY AR	EΑ			
				Floor Are	a :	272.0 sa
Exposure	•	s		Roof Area		272.0 sq
Wall Area					•	
Glass Area					: W1,I	n.Gr
*******	******	******			*****	
ADDITIONAL E	LEMENT - W	all				
Weight	= L	(lb/sqf	=)	Exposure		S
Color	=			Net Area	=	38.0 sqf
<b>U-Value</b>	= 0.59	0 BTU/hr/	sqft/F			
*****				*****	*****	*****
ADDITIONAL E	LEMENT - 1	nriltratio	on			
Cooling	. 0 15 0	TW/eaft :	- A	1 CFM		
Heating	• 0.13 0	FM/sqft =	- 6	3 CFM		
Typical	. 0.19 0	FM/sqft :		2 CFM		
A Typical	. 0.19 0	tw\edic .		2 CFM 		
*****	******	******	******	******	*****	******
ADDITIONAL F	LEMENT - G	round				
UDDITIONUD E						
		= :	272.0 sqft			
Slab Floor	Area		_			
	Area		15.0 ft			

Space Na Prepared Carrier	E	y :	EN	IGG	AI	PPL	21. IC.	A,E	3, 1 [ON:	9A, S (	17,0	2		\1F1.							022	2890	1-90 0201 of 1
F******								***	***	 * * *	***	***	***	***	***	***	**	***	***		_		
				11				Roc	of		Gla	ass											
U-Value	•				_									Bui	ldin	a W	lei	aht		:	1	1	
Weight							•							Gla						:			
Color								I						Int						?		N	
People	:	sqft	:/p	er	BOI	n.	=	2	245	. 0	Scl	redi	ıle	=	1	Ac	ti	vit	y L	eve	1	=	2
Lights	:	W/sq	[ft	;			=		4.	25	Sci	nedu	ıle	=	2	Wa	itt	age	Mu	lt.		= ;	1.20
SPACE NA																							
SPACE NA	MIE	_		.13	₩.		٠,	2 1.	., .	,	,n, _	,,	F	loor	Are	ea.	:			98	0.0	) s	qft
Exposure		:					s					E	D,	of i	Ares					98			_
Wall Are						ი	.0				150	0.0	Ci	irre	nt.		·			-		-	•
Glass Ar						-	.0					0.0	E.	Leme	nts		•	El	.In	.Gr			
*****	. = 0			**	**1	***	**	***	***	* * 1											**:	***	***
ADDITION																							
W/sqft	 :				=			4.	. 11														
Total		itts			=			4,0	030														
Schedu	le	No.			=			·	3														
*****												***	***	***	***	***	***	***	***	***	**	***	***
ADDITION	IAI	ELE	ME	TN	- 	In 	fi 	ltı 	rat	101 	) 												
Coolin	ıg	:	:	٥.	15	CF	M/	sqi	Et	=		:	<b>L47</b>	CFM									
Heatin	ığ	:	:	٥.	23	CF	m'/	sqi	Et	=		2	225	CFM									
Typica	ì	:							ft				186	CFM									
ADDITION	* * *	***	* * * EME	**	**:				***	**	***	***	***	***	****	***	***	***	***	***	**:	***	****
Slab F	rlo	or P	\re	·			 =			98	30.0	sq:	ŧt							_ <b></b>			
							=				50.0	_											
Perime	et€	er					=				30.0	Ιt											

		U 2111 U	DIACE DA	ESCRIPTION			
Space Name :	SYS #1	SW CORNER				1	10-01-90
Prepared By	: ENGG AF	PPLICATION	S CONSUL				22890201
Carrier Hour	lv Analys	sis Program	m			Page	e 1 of 1
******	*****	****	*****	******	*****	****	******
	Walls	Roof	Glass				
U-Value :	0.059	0.090	1.060	Building 1	Weight	:	M
Weight :				Glass Fac	tor	: 1.	.00
Color :	D	L D		Internal	Shades	?	N
Paonla . sr	ft/persor	n = 0	.O Schedi	ule = 1 A	ctivity	Level	<b>=</b> 2
reopie : Bq.	acft	· = 2	67 Schedi	= 2 W	attade M	ult.	= 1.20
		pe =		ed, not vente			
	veare ill	,			- 		
SPACE NAME	= SVS #1	SW CORN	ER				
SPACE NAME	- 515 #3			Floor Area	•	240.	0 saft
Fynagura	•	w	s	Roof Area			0 sqft
Exposure Wall Area	•	300 0	180.0	Current	•		
Glass Area		0.0	0.0	Elements	. El.T	n.Gr	
Glass wies				*****			*****
ADDITIONAL E	LEMENT -	Other Ele					
W/sqft	=	4.40					
Total Watt		1,056					
		3					
Schedule N	o. =						
		*****	*****	 ********	 ******	****	*****
	******			******	*****	****	*****
**************************************	**************************************	Infiltrat	ion		******	*****	*****
********** ADDITIONAL E	********** LEMENT -	Infiltrat	ion 	36 CFM 55 CFM	*****	*****	******
********** ADDITIONAL E  Cooling Heating	********** LEMENT - : 0.15 : 0.23	Infiltrat	ion  = =	36 CFM	******	****	*****
********** ADDITIONAL E	********** LEMENT - : 0.15 : 0.23	Infiltrat	ion  = =	36 CFM 55 CFM	******	*****	*****
********** ADDITIONAL E  Cooling Heating	*********** LEMENT - : 0.15 : 0.23 : 0.19	Infiltrat CFM/sqft CFM/sqft CFM/sqft	ion  = =	36 CFM 55 CFM	******	****	******
********* ADDITIONAL E  Cooling Heating Typical  *********** ADDITIONAL E	******** LEMENT - : 0.15 : 0.23 : 0.19	Infiltrat CFM/sqft CFM/sqft CFM/sqft *********** Ground	ion = = = = *****	36 CFM 55 CFM 46 CFM	******	*****	******
********* ADDITIONAL E  Cooling Heating Typical	******** LEMENT - : 0.15 : 0.23 : 0.19	Infiltrat CFM/sqft CFM/sqft CFM/sqft *********** Ground	ion = = = = *******	36 CFM 55 CFM 46 CFM	*****	*****	******
Cooling Heating Typical ************ ADDITIONAL E	******** LEMENT - : 0.15 : 0.23 : 0.19	Infiltrat	ion = = = = *****	36 CFM 55 CFM 46 CFM	*****	****	******

Space Name : SYS #1 TUNNEL 10-01-90 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.059 0.090 1.060 Building Weight: M
Weight: H L Glass Factor : 1.00
Color: D D Internal Shades ? N People : sqft/person = 0.0 Schedule = 1 Activity Level = 2 Lights : W/sqft = 1.40 Schedule = 2 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented SPACE NAME = SYS #1 TUNNEL \*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric 4.40 = 7,075 Total Watts Schedule No. \*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Wall \_\_\_\_\_\_\_\_\_\_ Weight = M (lb/sqft) Exposure = W Color = D Net Area = 1,290.0 sqft U-Value = 0.630 BTU/hr/sqft/F \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration Cooling : 0.15 CFM/sqft = 241 CFM Heating : 0.23 CFM/sqft = 370 CFM Typical : 0.19 CFM/sqft = 306 CFM \_\_\_\_\_\_\_ \*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Ground 1,608.0 sqft Slab Floor Area = 134.0 ft Perimeter 1.0 ft Depth \*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Wall Weight = L (lb/sqft) Exposure = Color = D Net Area = Net Area = 40.0 sqft U-Value = 0.590 BTU/hr/sqft/F 

Space Name : SYS Prepared By : EN Carrier Hourly A	#1 21,19,CORR GG APPLICATIONS analysis Program	CONSUL	10-01-90 6022890201 Page 1 of 1
Wa	11s Roof 059 0.090 H L	Glass 1.060 Building Weight	: M : 1.00 ? N
People : sqft/p Lights : W/sqft : Fixtur	person = 0. = 1.7 = Type =	O Schedule = 1 Activity 2 Schedule = 2 Wattage 1 Recessed, not vented	Y Level = 2 Mult. = 1.20
SPACE NAME = S			700.0 sqft
Exposure : Wall Area : Glass Area :	0.0	S Roof Area : 0.0 Current 0.0 Elements : El	700.0 sqft
ADDITIONAL ELEME	NT - Other Elec		
W/sqft	= 3.73 = 2,610 = 3		
ADDITIONAL ELEME		**************************************	*****
Cooling : Heating : Typical :	0.15 CFM/sqft 0.23 CFM/sqft 0.19 CFM/sqft	= 105 CFM = 161 CFM = 133 CFM	
ADDITIONAL ELEME	**************************************	*********	******
Slab Floor Are Perimeter Depth	ea = = = =	700.0 sqft 0.0 ft 1.0 ft	

Space Name : SYS #1		/COR	10-01-90
Prepared By : ENGG AP			6022890201
Carrier Hourly Analys			Page 1 of 1
*****	******	*****	*****
Walls	Roof	Glass	
U-Value: 0.059	0.090		
Weight : H	L	Glass Factor	
Color : D	D	Internal Shades	3 ? N
People : sqft/person	= 0.0	Schedule = 1 Activit	
Lights : W/sqft		Schedule = 2 Wattage	Mult. = 1.20
: Fixture Typ	e = 1	Recessed, not vented	
SPACE NAME = SYS #1	CLEAN AREA		
		Floor Area :	
Exposure :	W	S Roof Area :	2,244.0 sqft
Wall Area :	0.0	0.0 Current	
Glass Area :	0.0	0.0 Elements : El	
******			*****
ADDITIONAL ELEMENT -	Otner Electr	1C 	
W/sqft =	4.40		
Total Watts =	9,874		
Schedule No. =	3		
*************	 *******	**********	*****
ADDITIONAL ELEMENT -	Infiltration		
Cooling : 0.15	 CFM/sqft =	337 CFM	
	CFM/sqft =	516 CFM	
	CFM/sqft =	426 CFM	
ADDITIONAL ELEMENT -		******	*****
Slab Floor Area	•	4.0 sqft	
Perimeter		0.0 ft	
Depth	= ,	1.0 ft	

		47	77 0	. 7A.	5.VAULT	•						1()-(	01-9
Space Name :	SYS	#4	11,5	, ,,									
Prepared By						UL						02289	
Carrier Hour	cly A	maly	sis P	rogra	am							ge 1	
*****							****	***	****	***	****	****	***
		lls		Roof		ass							
U-Value :		059	0	.090	1.	060			Weig				
Weight :		H		L					ctor			1.00	
Color :		D		D			Inte	rnal	Shad	es	?	N	
People : sq Lights : W/	ıft/p	erso	n =	182	2.7 Sc	hedul	<b>=</b>	1	Activ	ity	Leve:	l =	
Lights : $W/$	/sqft		=	· 3.	.50 Sc	hedul	e =	2	Watta	.ge 1	Mult.	*	1.2
: Fi	xtur	e Typ	pe =	:	1 Rec	essed	, not	vent	ed				
SPACE NAME		vc #		0 7		 IT TP							
SPACE NAME	- 5	15 #	. 11	,, ,, ,,	a, s, vac		Floor	Area			1.279	9.0 s	saft
Exposure	•		To the	!			Roof A						
Exposure Wall Area	•	•	315 0	1		0.0			•		_,_,		-4-0
Glass Area	•	•	17 5	' :		0.0				ום נ	מד וע	Gr.	
4********										***	*****	, G.L * * * * *	
• • • • • • • • • • • • • • • • • • • •													
ADDITIONAL E													
		NT - 											
W/sqft		=		2.9	<b></b> 7								
W/sqft Total Watt		=		2.9	<b></b> 7								
W/sqft		=		2.9	7 0								
W/sqft Total Watt	:s 10.	=		2.9 3,80	7 0 3	****	****	***	****	***	****	***	
W/sqft Total Watt Schedule N	:s No.	= = = :****	 ****	2.9	7 0 3	****	****	****	****	***	 ****		
W/sqft Total Watt Schedule N	s No. ****	= = = :****	 ****	2.9	7 0 3	****	****	***	****	***	****		 ***
W/sqft Total Watt Schedule N  ********** ADDITIONAL E  Weight	s No. ****	= = = ****	***** Wall	2.97	7 0 3		Exposu	 ire		***	****	**** E	 ***
W/sqft Total Watt Schedule N	s No. ****	= = = *****	***** Wall	2.97	7 7 3 			 ire		***	*****	 E	
W/sqft Total Watt Schedule N ************ ADDITIONAL E Weight	S No.  ELEME = =	= = = ****	***** Wall M (	2.9° 3,800	7 7 3 	 ] ]	Exposu	 ire		***		 E	
W/sqft Total Watt Schedule N ********** ADDITIONAL E Weight Color U-Value	SIO.	= = = = = = = = = = = = = = = = = = =	***** Wall M ( D	2.9 3,800 ***** 1b/so	7 3 3 ******* qft)	]    F	Exposu	re ea	=		658	E .0 s	 qft
W/sqft Total Watt Schedule N ************ ADDITIONAL E Weight Color U-Value	:8 No. :**** :: :: :: ::	= = = = = = = = = = = = = = = = = = =	***** Wall M ( D	2.9°3,800	7 7 3 ******* qft) r/sqft/	]    F	Exposu	re ea	=		658	E .0 s	 qft
W/sqft Total Watt Schedule N ************ ADDITIONAL E Weight Color U-Value	:8 No. :**** :: :: :: ::	= = = = = = = = = = = = = = = = = = =	***** Wall M ( D	2.9°3,800	7 7 3 ******* qft) r/sqft/	]    F	Exposu	re ea	=		658	E .0 s	 qft
W/sqft Total Watt Schedule N  ********* ADDITIONAL E  Weight Color U-Value  ************ ADDITIONAL E	SELEME	0.(	M (D) 063 B	2.9°3,800°3,	7 7 3 ******* qft) r/sqft/ ******	]    	Exposu Net Ar	re ea	=		658	E .0 s	 qft
W/sqft Total Watt Schedule N  ********** ADDITIONAL E  Weight Color U-Value  *********** ADDITIONAL E	SELEME	0.() *****	M ( D D 063 B Infi	2.9°3,800°3,	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8		Exposu Net Ar	re ea	=		658	E .0 s	 qft
W/sqft Total Watt Schedule N ********** ADDITIONAL E Weight Color U-Value ********** ADDITIONAL E	SELEME	0.0 0.0 0.15 0.23	M ( D D O O O O O O O O O O O O O O O O O	2.9 3,800 ***** lb/so TU/hi **** ltrat	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	192 294	Exposu Net Ar ****** 2 CFM 4 CFM	re ea	=		658	E .0 s	 qft
W/sqft Total Watt Schedule N ********** ADDITIONAL E Weight Color U-Value *********** ADDITIONAL E	SELEME	0.() *****	M ( D D O O O O O O O O O O O O O O O O O	2.9 3,800 ***** lb/so TU/hi **** ltrat	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	192 294	Exposu Net Ar	re ea	=		658	E .0 s	 qft
W/sqft Total Watt Schedule N ********** ADDITIONAL E Weight Color U-Value ********** ADDITIONAL E	SELEME	0.00 0.15 0.23 0.19	M (D) D63 B	2.9 3,800 ***** lb/so TU/hi **** ltrat sqft sqft	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	192 294	Exposu Net Ar ****** 2 CFM 4 CFM 3 CFM	re ea ****	****	***1	658	E .O so	qft  ****
W/sqft Total Watt Schedule N ************ ADDITIONAL E Weight Color U-Value *********** ADDITIONAL E Cooling Heating Typical	SELEME	0.0 ***********************************	M (DD)63 BICTORY	2.9°3,800°3,	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	192 294	Exposu Net Ar ****** 2 CFM 4 CFM 3 CFM	re ea ****	****	***1	658	E .O so	qft  ****
W/sqft Total Watt Schedule N ********** ADDITIONAL E Weight Color U-Value ********* ADDITIONAL E Cooling Heating Typical ********** ADDITIONAL E	SELEME	0.0 ***** O.15 O.23 O.19	M (DD)63 BINGS CFM/CFM/CFM/CFM/CFM/CFM/CFM/CFM/CFM/CFM/	2.9°3,800°3,	7 0 3 	19: 29: 24:	Exposu Net Ar ****** 2 CFM 4 CFM 3 CFM	re ea ****	****	***1	658	E .O so	qft  ****
W/sqft Total Watt Schedule N  ********** ADDITIONAL E  Weight Color U-Value  ********** ADDITIONAL E  Cooling Heating Typical  ********** ADDITIONAL E	SELEME	0.0 ***** O.15 O.23 O.19	***** Wall D 063 B ***** Infi CFM/ CFM/ CFM/	2.9°3,800°3,	7 0 3 qft) r/sqft/ tion = = *******	19: 29: 24: *****	Exposu Net Ar ****** 2 CFM 4 CFM 3 CFM	re ea ****	****	***1	658	E .O so	qft  ****
Total Watt Schedule N  **********  ADDITIONAL E  Weight Color U-Value  **********  ADDITIONAL E  Cooling Heating Typical  **********  ADDITIONAL E	SELEME	0.0 ***** O.15 O.23 O.19	M (DD)63 BINGS CFM/CFM/CFM/CFM/CFM/CFM/CFM/CFM/CFM/CFM/	2.9°3,800°3,	7 0 3 ******* qft) r/sqft/ ******* tion = = 1,279.0	19: 29: 24: *****	Exposu Net Ar ****** 2 CFM 4 CFM 3 CFM	re ea ****	****	***1	658	E .O so	qft  ****

1 M					10 01 00
pace name :	: SYS #2 :	7,8,8A,10,12	,o,c		10-01-90
		PPLICATIONS	CONSUL		6022890201
Carrier Hour	rly Analys	sis Program			Page 1 of 1
******	*****	******	*****	*****	*****
1	Walls	Roof	Glass		
J-Value :	0.059	0.090	1.060	Building Weight	: M
Veight :	H	L		Glass Factor	: 1.00
Color :	D	D		Internal Shades	? N
People : so	ft/person	n = 1245.0	Schedule	= 1 Activit	y Level = 2
	/sqft		Schedule		Mult. = 1.20
				not vented	
DACE NAME	- cvc #	7,8,8A,10,			
PACE NAME	- 313 #	2 7,0,0A,10,		Floor Area :	6.225.0 saft
Exposure		E		Roof Area :	
=	•	0.0		Current	0,22000 0420
		0.0		Elements : El	In Gr
lass Area				**********	
W/sqft		Other Elect			
		5.630			
Total Watt	ts =	5,630 3			
Total Watt	ts = No. = ******	3			******
Total Watt Schedule I	ts = No. = *********** ELEMENT -	3 ************************************	on 		*******
Total Watt Schedule N	######################################	3	on  = 934		
Total Watt Schedule I	######################################	3 ******** Infiltration CFM/sqft =	934 1,433		

Carrier Hourly		ONS CONSUL			10-01-90 6022890201 Page 1 of 1
~	**************************************	0 1.060	Building Glass Fa	ctor :	: M : 1.00
People : sqft/j Lights : W/sqf : Fixtu		1.71 Sched	dule = 1 dule = 2 sed, not vent	Wattage Mult	
Exposure :	E 340.0 35.0	444.(	Floor Area N Roof Area Current	: 6	135.0 sqft 555.0 sqft In,Gr,Pt
W/sqft Total Watts Schedule No.	= 3. = 1,6 =				
**************************ADDITIONAL ELEM	************* ENT - Wall	*****	*****	*****	*****
Weight = Color = U-Value =	D	sqft) hr/sqft/F	Exposure Net Area	= 1	N 17.0 sqft
Color = U-Value =	D 0.590 BTU/	hr/sqft/F	Exposure Net Area	= 1	17.0 sqft
Color = U-Value = ***********************************	D 0.590 BTU/	hr/sqft/F ******** ation 	Net Area	= 1	17.0 sqft
Color = U-Value = ***********************************	D 0.590 BTU/ ************ ENT - Infiltr 0.15 CFM/sqf 0.23 CFM/sqf 0.19 CFM/sqf	hr/sqft/F ******** ation 	Net Area  *********  65 CFM  100 CFM	= 1	17.0 sqft
Color = U-Value = ***********************************	D 0.590 BTU/ ************* ENT - Infiltr 0.15 CFM/sqf 0.23 CFM/sqf 0.19 CFM/sqf	hr/sqft/F  **********  ation  t =  t =  t =  *********	Net Area  *************  65 CFM  100 CFM  83 CFM  ***********************************	= 1	17.0 sqft
Color = U-Value =  ***********************************	D 0.590 BTU/ ************ ENT - Infiltr 0.15 CFM/sqf 0.23 CFM/sqf 0.19 CFM/sqf ************* ENT - Ground ea = = = = = =	hr/sqft/F  *********  ation  t =  t =  t =  **********  435.0 sc  56.0 ft  1.0 ft	Net Area  ***************  65 CFM  100 CFM  83 CFM  ***********************************	= ]	**********

10-17-90 Name : RTU-1 Carrier Hourly Analysis Program 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\*\*\* 1. SYSTEM NAME AND TYPE System Name = RTU-1
System Class = Constant Volume
System Type = (CV/RH) Constant Volume w/ Terminal Reheat
Number of Zones = 6 \*\*\*\*\*\*\*\*\*\* 2. SPACE SELECTION (see separate printout) \*\*\*\*\*\*\*\*\*\*\*\* 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA \_\_\_\_\_ OperationThermostat SetpointsVentilationPeriodCoolingHeatingDampers Occupied 75.0 F 68.0 F Unoccupied 75.0 F 68.0 F OPEN OPEN Weekday : Occupied Period Begins at 0 ; Duration = 24 hrs Saturday : Occupied Period Begins at 0 ; Duration = 24 hrs Sunday : Occupied Period Begins at 0 ; Duration = 24 hrs Design Day : Occupied Period Begins at 0 ; Duration = 24 hrs \_\_\_\_\_\_ \*\*\*\*\*\*\*\*\*\* 4. SUPPLY, VENTILATION, RETURN AIR DATA SUPPLY AIR Supply air flow rate = 5400.00 CFM Supply temperature control = 1 Constant VENTILATION AIR Nominal ventilation flow rate = 1680.00 CFM
Minimum ventilation flow rate = 1680.00 CFM Damper leak rate = 5 % of vent air RETURN AIR Zone exhaust air flow rate = 100.00 % of vent. air Zone exhaust fan power = 0.0 kW Zone exhaust fan power = 0.0 kW Is a return plenum used ? N

\*\*\*\*\*\*\*\*\*\*

10-17-90 Name : RTU-1 6022890201 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 2 of 2 \*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN = 2:Forward curved Type = 2.25 in wg Static Efficiency 65 % = 1 Draw-thru = Configuration RETURN FAN = 1: (Fan does not exist) Type \*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL (Not used) OUTDOOR AIR ECONOMIZER CONTROL = 3:Integrated dry-bulb = 150.0 FUpper cutoff point Lower cutoff point = -60.0 FVENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL = 50 % = 40 % Upper RH setpoint Lower RH setpoint \*\*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050

Type of supplemental heating = 1 Not Used 

10-17-90 Name: RTU-2 6022890201 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\*\*\*

1. SYSTEM NAME AND TYPE

System Name = RTU-2

System Class = Constant Volume
System Type = (CV/RH) Constant Volume w/ Terminal Reheat

Number of Zones = 3

SPACE SELECTION (see separate printout) \*\*\*\*\*\*\*\*\*\*\*\*\*\*

3.	THERMOSTAT	6	EQUIPMENT	SCHEDULING	DATA
----	------------	---	-----------	------------	------

Operation Period		Therm Coolin	nostat ng	-	oints leating		Ventilation Dampers
Occupied Unoccupied		75.0 75.0	_		68.0 F 68.0 F		OPEN OPEN
Weekday Saturday Sunday Design Day	: Occupied : Occupied : Occupied : Occupied	Period Period	Begins Begins	at at	0	; Duration; Duration; Duration; Duration;	n = 24 hrs n = 24 hrs

\*\*\*\*\*\*\*\*\*\*\*\*

### 4. SUPPLY, VENTILATION, RETURN AIR DATA

SUPPLY AIR

Supply air flow rate = Supply temperature control = = 5400.00 CFM 1 Constant

VENTILATION AIR

Nominal ventilation flow rate = 1050.00 CFM Minimum ventilation flow rate = 1050.00 CFM

Damper leak rate 5 % of vent air

RETURN AIR

Zone exhaust air flow rate = 100.00 % of vent. air Zone exhaust fan power = 0.0 kW Is a return plenum used ? N

10-17-90 Name: RTU-2 6022890201 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 2 of 2 \*\*\*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN 2:Forward curved Type = 2.25 in wg Static Efficiency 65 % Configuration 1 Draw-thru RETURN FAN 1: (Fan does not exist) Type 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL (Not used) OUTDOOR AIR ECONOMIZER CONTROL = 3:Integrated dry-bulb = 150.0 FUpper cutoff point Lower cutoff point = -60.0 FVENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL 50 % Upper RH setpoint = 40 % Lower RH setpoint \*\*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050

Type of supplemental heating = 1 Not Used \*\*\*\*\*\*\*\*\*\*\*

AIR SYSTEM DESCRIPTION 10-17-90 Name : SYSTEM #1 6022890201 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 \*\*\*\*\*\*\*\*\* . SYSTEM NAME AND TYPE System Name = SYSTEM #1
System Class = Constant Volume
System Type = (CV/RH) Constant Volume w/ Terminal Reheat
Number of Zones = 1 \*\*\*\*\*\*\*\*\*\* 2. SPACE SELECTION (see separate printout) \*\*\*\*\*\*\*\*\*\* 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA \_\_\_\_\_\_ Operation Thermostat Setpoints Ventilation Period Cooling Heating Dampers \_\_\_\_\_\_\_ 
 Occupied
 75.0 F
 68.0 F

 Unoccupied
 75.0 F
 68.0 F
 OPEN OPEN \_\_\_\_\_\_\_ Weekday : Occupied Period Begins at 0 ; Duration = 24 hrs Saturday : Occupied Period Begins at 0 ; Duration = 24 hrs Sunday : Occupied Period Begins at 0 ; Duration = 24 hrs Design Day : Occupied Period Begins at 0 ; Duration = 24 hrs \_\_\_\_\_\_ \*\*\*\*\*\*\*\*\*\* 4. SUPPLY, VENTILATION, RETURN AIR DATA SUPPLY AIR Supply air flow rate Supply temperature control Supply air flow rate = 10500.00 CFM = 1 Constant VENTILATION AIR Nominal ventilation flow rate = 5900.00 CFM
Minimum ventilation flow rate = 5900.00 CFM 5 % of vent air = Damper leak rate RETURN AIR Zone exhaust air flow rate = 100.00 % of vent. air

\*\*\*\*\*\*\*\*\*

Zone exhaust fan power = 0.0 kW Is a return plenum used ? N

10-17-90 Name : SYSTEM #1 Carrier Hourly Analysis Program 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 2 of 2 \*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN 7:Backward inclined or air foil Type = = 2.25 in wg Static Efficiency 54 % = Configuration 2 Blow-thru RETURN FAN = 1:(Fan does not exist) Type \*\*\*\*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL Setpoint temperature = 72.0 F OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL Upper RH setpoint = 50 %Lower RH setpoint = 40 %Upper RH setpoint \*\*\*\*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050

Type of supplemental heating = 1 Not Used \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

AIR SYSTEM DESCRIPTION 10-17-90 Name : SYSTEM #2 6022890201 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\*\* 1. SYSTEM NAME AND TYPE System Name = SYSTEM #2 System Class = Constant Volume System Type = (CV/RH) Constant Volume w/ Terminal Reheat Number of Zones = 1 \*\*\*\*\*\*\*\*\*\*\* 2. SPACE SELECTION (see separate printout) \*\*\*\*\*\*\*\*\*\*\* 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA

Operation		Thermostat	Setpoints	Ventilation
Period		Cooling	Heating	Dampers
Occupied		75.0 F	68.0 F	OPEN
Unoccupied		75.0 F	68.0 F	OPEN
Weekday Saturday Sunday Design Day	: Occupied : Occupied	Period Begins Period Begins Period Begins Period Begins	s at 0; s at 0;	Duration = 24 hrs Duration = 24 hrs Duration = 24 hrs Duration = 24 hrs

\*\*\*\*\*\*\*\*\*\*\*

# 4. SUPPLY, VENTILATION, RETURN AIR DATA

### SUPPLY AIR

Supply air flow rate = 10700.00 CFM
Supply temperature control = 1 Constant

VENTILATION AIR

Nominal ventilation flow rate = 2500.00 CFM
Minimum ventilation flow rate = 2500.00 CFM
Damper leak rate = 5 % of vent air

RETURN AIR
Zone exhaust air flow rate = 100.00 % of vent. air

Zone exhaust fan power = 0.0 kW Is a return plenum used ? N

\*\*\*\*\*\*\*\*\*\*\*\*

Name : SYSTEM #2				10-17-90
Carrier Hourly Analysis Pro		6022890201		
Prepared By : ENGG APPLICA	SUL	Page 2 of 2		
*******	****	***	********	*****
S. FAN DATA				
SUPPLY FAN				
Type	=	7	:Backward inclined or	air foil
Static	= 2	.25	in wg	
Efficiency	=	54	8	
Configuration	=	2	Blow-thru	
RETURN FAN				
Type	=	1	:(Fan does not exist)	
*******	*****	***	*****	******
6. ACCESSORY DEVICES AND S	YSTEMS			
PREHEAT COIL				
Setpoint temperature	=	7:	2.0 F	
OUTDOOR AIR ECONOMIZER CO				
(Not used)				
VENTILATION AIR RECLAIM				
(Not used)				
HUMIDITY CONTROL				
Upper RH setpoint	=		50 %	
Lower RH setpoint	=		40 %	
******	*****	***	*****	******
7. MISCELLANEOUS SYSTEM DAT	ΓA			
Cooling coil bypass facto	or		= 0.050	
Type of supplemental heat			= 1 Not Used	1
*******	****	***	******	*****

### PLANT DESCRIPTIONS

01-25-91 Plant : #2 OIL FIRED BOILER Prepared By : ENGG APPLICATIONS CONSUL 6100190202 Carrier Hourly Analysis Program Page 1 of 1 \*\*\*\*\*\*\*\*\*\*\* PLANT NAME AND TYPES Class = Individual Plants Name = #2 OIL FIRED BOILER Cooling Plant Type = User Defined Heating Plant Type = Combustion \*\*\*\*\*\*\*\*\*\*\*\* 2 AIR SYSTEM SELECTION Mult | Air System Name Air System Name 1 RTU-2 RTU-1 1 SYSTEM #2 SYSTEM #1 \*\*\*\*\*\*\*\*\*\*\*\* 3a COOLING PLANT DATA (User Defined) = 83.65 Ton Estimated maximum cooling coil load = 75.30 Ton Nominal capacity = 1.200 kW/Ton Nominal input power rate = DXType of cooling = Air Cooled Condenser type PART LOAD PERFORMANCE % Load % Power % Load % Power % Load % Power 60 ---- 80 90 ---- 100 30 ---- 50 90 -----80 ---- 100 50 -----80 40 -----65 20 ----40 65 10 ----\*\*\*\*\*\*\*\*\*\* 3b HEATING PLANT DATA (Combustion) = 1708.70 MBHEstimated maximum heating coil load = Fuel Oil Fuel type Rated.plant output = 1762.0 MBH = Hydronic Type of heating Is plant efficiency computer generated ? Seasonal plant efficiency = \*\*\*\*\*\*\*\*\*\*\*\*\* 4 PUMP SYSTEM DATA 0.00 ft wg Hot water pumping system head Hot water pumping system delta T = 0.00 F

\*\*\*\*\*\*\*\*\*\*

FUEL RATE DATA

Fuel Rate: DOMESTIC FUEL OIL #2 (GENERIC) 01-25-91
Prepared By: ENGG APPLICATIONS CONSUL 6100190202
Carrier Hourly Analysis Program Page 1 of 1

1. FUEL RATE DATA

NAME

Name of rate schedule = DOMESTIC FUEL OIL #2 (GENERIC)

CURRENCY

Currency name = MBTU
Currency symbol = MBTU

BASIC INFORMATION

Units of measurement = Gallon

Conversion factor = 138.70000 kBTU/Gallon Type of rate schedule = 1 Simple Flat rate charge = 0.13870 MBTU/Gallon

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### BUILDING DESCRIPTION

Building : BUILDING #317 01-25-91 6100190202 Prepared By: ENGG APPLICATIONS CONSUL Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\* . BUILDING INPUTS = BUILDING #317 BUILDING NAME MISCELLANEOUS ELECTRIC 0.0 kW Maximum power 1 Power schedule DOMESTIC WATER HEATING Is a domestic how water system used ? = 100.0 gal Maximum hourly hot water use Hot water schedule = 65.0 F Average entering water temperature = = 140.0 F = 2 : Combustion Average hot water supply temperature Heating plant type = 2 : Fuel Oil Fuel type 1862.0 MBH Plant capacity Is plant efficiency computer generated ? N 64 % Annual plant efficiency OTHER INPUTS Additional building floor area = 1130.0 sq Electrical generating efficiency = 100.00 % 1130.0 sqft \*\*\*\*\*\*\*\*\*\*\* 2. PLANT SELECTION Mult Plant Name #2 OIL FIRED BOILER 1 \* 3. FUEL & ELECTRIC RATE SELECTION No. Name of Rate Schedule Currency Fuel or Energy \_\_\_\_\_\_\_ 10 GENERIC 8 NATURAL GAS (GENERIC) Natural Gas 6 DOMESTIC FUEL OIL #2 (GENERIC) Fuel Oil Propane 9 Empty...
Remote Source Heating 9 Empty...
Remote Source Cooling 9 Empty...

\*

MBTU

### MONTHLY ENERGY COSTS

Building : BUILDING #317 Site : FT. BELVOIR, VIRGINIA

01-25-91 IA 6100190202

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program Page 1 of 1

TABLE 1. HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	Remote Cooling
Jan	173	0	1,114	0	0	0
Feb	156	0	940	0	0	0
Mar	173	0	759	0	0	0
Apr	170	0	423	0	0	0
May	181	0	266	0	0	0
June	206	0	143	0	0	0
July	244	0	103	0	0	0
Aug	238	0	115	0	0	0
Sept	190	0	199	0	0	0
Oct	177	0	392	0	0	0
Nov	168	0	644	0	0	0
Dec	173	0	996	0	0	0
Tot.	2,249	0	6,095	0	0	0

\*\*\*\*\*\*\*\*\*\*\*

TABLE 2. NON-HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	
Jan	87	0	22	0	0	
Feb	79	0	20	0	0	
Mar	90	0	23	0	0	
Apr	86	0	22	0	0	
May	90	0	23	0	0	
June	87	0	22	0	0	
July	87	0	22	0	0	
Aug	93	0	23	0	0	
Sept	81	0	20	0	0	
Oct	93	0	23	0	0	
Nov	86	0	22	0	0	
Dec	85	0	21	0	0	
Tot.	1,043	0	260	0	0	

Building : BUILDING #317

Site : FT. BELVOIR, VIRGINIA

01-25-91 6100190202

Prepared By : ENGG APPLICATIONS CONSUL

Farrier Hourly Analysis Program Page 1 of 1

TABLE 1. MONTHLY COMPONENT CHARGES (MBTU)

Month	Energy Charges	Fixed Charges	Taxes	Total Charges
Jan	1,136	0	0	1,136
Feb	960	0	0	960
Mar	782	0	0	782
Apr	445	0	0	445
May	289	0	0	289
June	165	0	0	165
July	125	0	0	125
Aug	139	0	0	139
Sept	218	0	0	218
Oct	416	0	0	416
Nov	666	0	0	666
Dec	1,017	0	0	1,017
Tot.	6,355	0	0	6,355

TABLE 2. MONTHLY TOTALS

Month	Charges (MBTU)	Energy (Gallon)	Effective Rate (MBTU/Gallon)
 Jan	1,136	8,188	0.13870
Feb	960	6,919	0.13870
Mar	782	5,638	0.13870
Apr	445	3,207	0.13870
May	289	2,080	0.13870
June	165	1,188	0.13870
July	125	<b>8</b> 98	0.13870
Aug	139	999	0.13870
Sept	218	1,574	0.13870
Oct	416	2,999	0.13870
Nov	666	4,801	0.13870
Dec	1,017	7,329	0.13870
Tot.	6,355	45,819	0.13870

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

THE SIMULATIONS ESTIMATED HEATING LOAD (1708.70 MBH)
IS WORST CASE CONDITION AND PROBABLY OCCURES
DURING JANUARY. THIS LOAD ONLY REPRESENTS THE
SYSTEMS SIMULATED WHICH REQUIRE SUMMER STEAM.

SINCE THE NEW LOCAL BOILER WILL ONLY BE NEEDED FROM MID APRIL THRU MID OCTOBER WE WILL NOT NEED AS LARGE A BOILER LOAD AS INDICATED BY THE COMPUTER SIMULATION.

IF WE TAKE THE AVERAGE MBTU FOR DAYS IN APPIL
(WORST CASE) AND ADD 20% AS A SAFETY FACTOR THE
RESULTANT LOAD WILL BE SUFFICIENT TO SELECT A
LOCAL STEAM BOILER TO ACCOMMODATE THE BUILDINGS
STEAM REQUIREMENTS DURING THE SUMMER.

SUMMER STEAM

AVG. MBTU/DAY

1

APR 14.84 WORST CASE

 $14.84/24 = 618.33 \times 1.2 =$ 

742 MBH LOAD

MAY 9,33

JUNE 5.50

JULY 4.04

Aug. 4.49

SEPT. 7.04

OCT. 13,42

SELECT: PEERLESS SERIES 7FDA INDUSTRIAL/COMMERCIAL

LAST IRON BOILER/BURNER UNIT

MODEL 709 FDA SU, 33 Bhp, 10" & VENT, 9 SECTIONS

OVERALL EFFICIENCY W/ PIPING LOSSES & PICK-UP = 61%

INPUT @ 9.6 APH #2 = 1331.5 MBH (CORRECTED)

CORRECTED NET OUTPUT = 816.3 MBH

50"L x 35" w x 60" h (2) 4" SURTAPS (1) 3" RET.

MONTHLY MBTU EXPENDED FOR SUMMER REHEAT AND DOMESTIC HOT WATER GENERATION AS SIMULATED BY CARRIER E-20 COMPUTER PROGRAM.

APR.	445/2	=	223 MBTU	1603 GALS
MAY.		=	289	2080
JUNE		=	165	1188
JULY		=	125	898
AUGI.		=	139	999
SEPT.		=	218	1574
OCT.	416/2	=	203	1499
			1367 MBTU	984 GALS

SELECT: 2000 GAL OIL STORAGE TANK (UNDERGROUND)
5'-4" x 12', (5) 2" TAPS, 1900 lbs, 7 GAGE, BUFFALO

	<u> </u>			DATE PREPARED				
CONSTRUCTION COST	ESTI	MATE	:	FEB	991	SHEET	OF	
PROJECT ENERGY SAVINGS	OPP	287/11	UITV '	SURVEY		R ESTIMATE		
COCATION					I	] CODE A (No design DE D (Preliminary d	-	
FT BELVOIR, VIR					CODE C (Final dasign)			
ENGINEERING APPL	CATION	US 6	<u>-01/50!</u>	LTANTS.	07	HER (Specify)		
DRAWING NO. OIL FIRED LP STEAM BOIL	ER	ESTIM	ATOR K	EF		CHECKED BY VP		
	QUANT	ITY		LABOR		MATERIAL		
SUMMARY	NO. Units	UNIT MEAS.	PER UNIT	TOTAL	PER UNIT	TOTAL	COST	
MECHANICAL RM, PREPARATION		15		500		300	800	
OIL FIRED LP STEAM BOILER	1	EA		2000		9830	11,830	
2000 GAL, OIL STOR, TANK	1	EA		4185		10,080	14,265	
MISC HOOK-UP COSTS		LS		428		379	807	
VENT CHIMNEY 10"\$	17	LF	7.30	124	58.30	991	1115	
FITTINGS, FLASHING, TOP, ETC.		کا		109		1687	1796	
AUTO DRAFT REGULATOR	1	EA		19		141	160	
STEAM PIPING, FITINGS, VALUES, ETC		15		2503		1832	4335	
CONDENSATE APING TRAPS ETC		15		712		942	1654	
CETURU FEEDWATER SYSTEM		LS		1576		940	2516	
ELECTRICAL WORK		15		475		225	700	
		-						
SUB-TOTAL				12,631		27,347	39,978	
						•		
							ندن ويوندن به ۱۳۰۰ در برای در سوری	
LABOR MARKUP 21%				2,653			2653	
TAXES 45%						1,231	1231	
SUB-TOTAL							43,862	
OVERHEAD 10%							4,386	
SUB-TOTAL							48,248	
PROFIT 10%							4,825	
SUB-TOTAL							53,073	
TOTAL						SAY	53,075	
							بروبين وفياد بإدارة مرجد مساول المالات	

# OIL STORAGE

					LISTED,	•			22106	3 FK	اعارات	
4		. , ,		<del>.</del>	20 12 VI	T						
18Z		TANK		200	4200		50	5'4"	έx	12' 1	-	
		HOLD DN										
		PIPING .			1,88 4	5 6	56			4.5	v	
	•	PIPING			11,30 .8							
5B		FOOT VALVE	•									
••		PUMP		59		4	5 <b>4</b> .			-	_	
		TANK GAGE SY	•	. 79	715.		194.					
		VALVES			7.1	5	16.					<u></u>
		SHUT OFFS				5_ 3	31.55					
		PAD CY	• •		94.		119				-	
	EXCA	VATION CY			<b>.</b>							
		TRENCH	• •		.74		1:75					- ·- <del>-</del>
(			·									
	· ·			4185.	775	0	11,93	ラ				
		in the second of										
		منصد د میدند و دور و د					<b>,</b>			•		
	LEA	K DETECTI										
. <b>_</b>		CONTROL	MASTE	P WALAR	M 725		<u>.</u>					_:
		PROBES :	4" WE	<u> </u>	760		• ••• •					
					650							<b></b>
		CABLE	<u></u>				<b></b> .					
					M							
		LIONAL TEN	K DET	ECTION	= 2330							

					•
STEAM	UALVES,	PIPIUG	FITTINGS,	VALVES	Etc.

		,		<b>L</b>	M	T	
132	(2) 4" 5	TM. VALV	es osty	120	215	335	
	(1)	boiLER t	U149c	5,80	11.90	17.70	
87	4" F	PIPING	(50')	9.60	6.77 1.03	17.40	
	3" F	PIPING	(10')	8.25	4.69 .89	13.83	
	. F	PIPING	( )				
110	4" \	NN/FLAL	ige (6)	36	H.80 3.82	54.62	
	4"	90° EUL	(10)	الـــــــــــــــــــــــــــــــــ	14.90 7.65	93,55	
	4"	TEE	(2)	120	27 1275	159.75	
	5"	TEE	(1)	185	50 12.75	247.75	
	3"	WN/F	.(1)	25	14.10 2.73	41.83	_
	3	90° EU	(2)	51	9 5.45	45.45	
	4	INS	(50)	2.65	5.07	7.72	
	3	INS	$(\boldsymbol{v})$	2.87	5.71	8,58	_
_			•••	2503	1832	4335	

CONDENSATE	PIPING	,	TRAPS
------------	--------	---	-------

	PIPING (	<b>' )</b> <u></u>	. ,		, we also to the control of the cont
263	TRAP ASSE	WBLY ( )			
	WELDING LA	BOR			<del>-</del>
		15 =	649	898	1547
				1.10	
				942	

# RETURU FEEDWATER

2"\_

	<b></b>		
PIPING (175)	5.85	2.68 .63	9.16
VALUE (4)	<b>4</b> 0	<b> 84</b>	124
MISC FITINGS 10%	103	60	
INS. (195)	1.57	1.10	2.67
	1433	854	2287
MISC INSTALL WORK	10% = 1576	940	2516

\_\_\_\_\_T\_\_\_M \_\_\_\_T\_\_\_\_\_T\_\_\_\_\_

.

	AU F	UEL CHIN	MEY,	UL LISTE	D, DOUBLE WALL	-, 304 INNER -	st outer
					T		
(17)	str	10"\$	7.30	58.30	65.60		

(17) STR 10"9	7.30	58.30	65.60	
(2) 45° EU	14.60	195	209.60	
90° TEE	16.70	214	230.70	
PLT. SUPPORT	17.55	123	140.55	
ROOF THIMBLE	17,55	310	327.55	
ROOF SUP, ASSEM,	18.45	405	423 45	٠
STACK CAP	8.75	245	253,75	
	169	1687	1796	
	233	2678	2911	

# OIL HOOK-UP

4		L	M	T.			
1	FILTER	9,90	9.95	19.95			
	-VALVE	8.25	4.25	12.50			
<b>✓</b>	VALVE	16.50	8.60	25.00			
<b>V</b> _	2" VENT CAP	6.20	7.50	13.70			
/	TUBE ( 25	2.53	1.28	3.81			
<b>V</b> .	2" STL V.P. (25	6) 4.25	4.08.67	11.00		 ч	<del>_</del>
J.	LOUVERS (Z)	7.20	24	31.20			
	DAMPERS (2)						
<b>V</b>	FILL CAP	6.20	7,50	13.70		 	, <del>,</del> , , , , , , , , , , , , , , , , ,
					•	 	

428 379 807

**BUILDING 327** 

### DESIGN PARAMETERS, SHGs

Location : FT. BELVOIR, VIRGINIA

Prepared By: ENGG APPLICATIONS CONSUL 6022890201
Carrier Hourly Analysis Program Page 1 of 1

\*\*\*\*\*\*\*\*\*\*\*\*

10-08-90

### DESIGN WEATHER PARAMETERS

TABLE 1. MAXIMUM SOLAR HEAT GAINS - AVERAGE DAYS (BTU/hr/sqft)

Month	NE	E	SE	S	SW	W	NW	N	Hor
Jan	24.2	61.2	97.5	110.3	97.5	61.2	24.2	24.2	80.0
Feb	31.8	74.8	105.8	113.9	105.8	74.8	31.8	31.8	107.2
Mar	40.8	87.0	107.0	108.1	107.0	87.0	40.8	40.8	136.8
Apr	60.0	97.4	104.4	97.2	104.4	97.4	60.0	49.3	164.3
May	74.9	103.1	98.4	84.1	98.4	103.1	74.9	54.9	181.8
Jun	85.1	109.3	97.6	79.2	97.6	109.3	85.1	57.9	195.2
Jul	80.5	106.7	98.2	81.5	98.2	106.7	80.5	56.4	189.3
Aug	69.1	104.1	105.8	94.5	105.8	104.1	69.1	52.2	177.6
Sep	52.3	99.4	114.8	111.7	114.8	99.4	52.3	45.4	158.1
Oct	36.4	88.4	117.8	123.0	117.8	88.4	36.4	36.4	128.2
Nov	26.7	66.6	101.9	113.4	101.9	66.6	26.7	26.7	89.4
Dec	21.4	53.1	87.8	101.1	87.8	53.1	21.4	21.4	68.4

TABLE 2. MAXIMUM SOLAR HEAT GAINS - DESIGN DAYS (BTU/hr/sqft)

				~~~~					
Month	NE	E	SE	s	SW	W	NW	N	Hor
Jan	20.4	158.8	243.8	253.8	243.8	158.8	20.4	20.4	141.8
Feb	53.0	189.0	246.5	237.6	246.5	189.0	53.0	24.7	187.6
Mar	95.9	219.8	234.6	200.8	234.6	219.8	95.9	29.4	228.9
Apr	141.6	224.4	200.2	146.8	200.2	224.4	141.6	34.1	255.9
May	166.1	220.1	170.8	104.7	170.8	220.1	166.1	37.4	267.9
Jun	173.2	215.4	156.8	87.9	156.8	215.4	173.2	47.4	269.7
Jul	163.6	215.7	166.5	101.6	166.5	215.7	163.6	38.3	264.6
Aug	136.4	216.6	193.2	141.9	193.2	216.6	136.4	35.8	251.2
Sep	90.3	207.2	224.7	195.0	224.7	207.2	90.3	30.5	221.3
Oct	51.9	182.7	238.2	230.7	238.2	182.7	51.9	25.5	184.2
Nov	20.7	156.0	239.8	249.9	239.8	156.0	20.7	20.7	141.2
Dec	18.5	141.8	236.4	254.2	236.4	141.8	18.5	18.5	122.1

### MASTER SCHEDULE SUMMARY

Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program

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MASTER SCHEDULE SUMMARY

Page 2

Prepared By : ENGG APPLICATIONS CONSUL

02-05-91

MASTER SCHEDU	ILE 4.	DOM	ESTIC	HOT I	WATER		Hou	rly Po	ercent	ages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	0	0	0	0	5	10	10	20	20	20	80
Saturday	0	0	0	0	0	2	2	2	5	5	5	5
Sunday	0	0	0	0	0	0	0	2	2	2	2	2
DESIGN	0	0	0	0	0	5	5	20	20	20	20	80
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
 Weekday	80	20	20	20	10	10	5	5	5	2	0	o
Saturday	5	5	5	2	2	2	2	2	0	0	0	0
Sunday	2	2	2	2	2	2	0	0	0	0	0	0
DESIGN	80	20	20	20	10	10	5	5	5	2	0	0

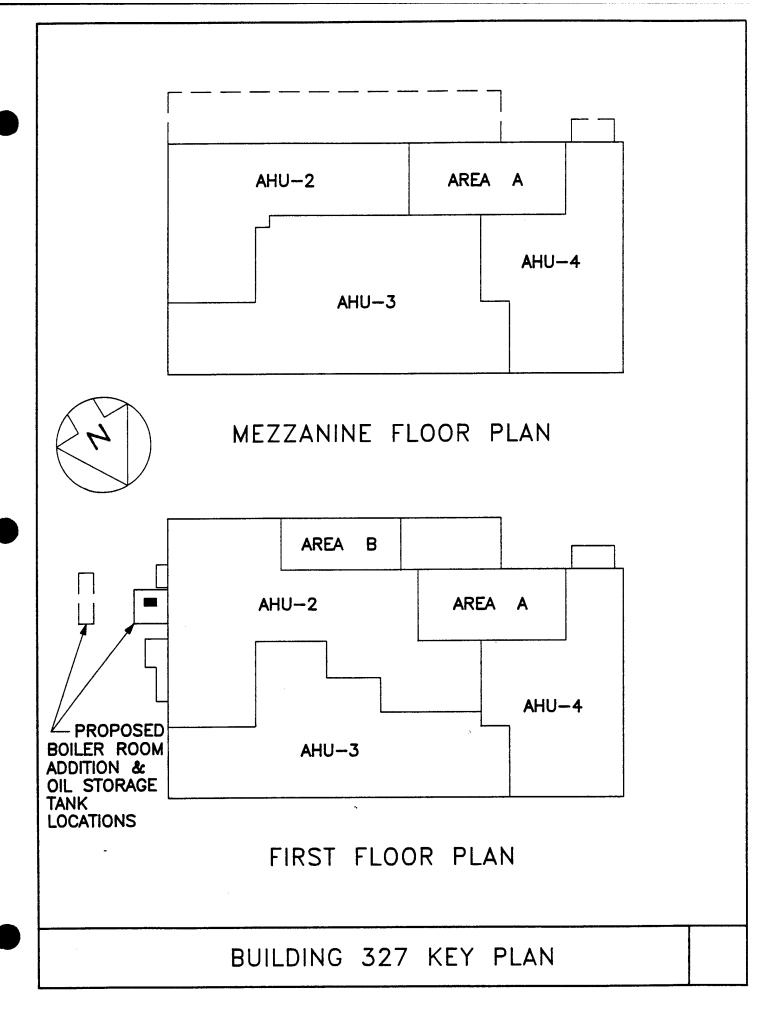
DAY TYPE DATA

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program

Page 1 08-29-90 6022890201

Month	DAY TYPE 1 Weekday	DAY TYPE 2 Saturday	DAY TYPE 3 Sunday	Total Days/Month
January	21	4	6	31
February	19	4	5	28
March	22	5	4	31
April	21	4	5	30
May	22	4	5	31
June	21	5	4	30
July	21	4	6	31
August	23	4	4	31
September	19	5	6	30
October	23	4	4	31
November	21	4	5	30
December	20	5	6	31



# ENGINEERING ANALYSIS

		Shed	et of
		By:	Ref
	Calculations for Infil	t@ration	
	Building 32	7	
Project: ESOS, Fort B	ELVOIR	Date:	1990
Contract No: DACA-31-89	-C=0189 EAC Projec	t No.: 89034.0	1
Calculations based on :	ASHRAE 1989 Page F 2.3.1	4.	•
Building Leakage Area			
	Effective Leakage Area, in <sup>2</sup>	Building Component Parameter	Leakage Area
	L,	$\mathbf{D}_{\mathrm{t}}$	L
Joints, ceiling/wall Windows Doors Wall - Window frames	0.063/ft <sup>2</sup> . of window 0.215/ft <sup>2</sup> . of doors 0.15/ft <sup>2</sup> . of window 0.072/ft <sup>2</sup> . of door 0.16/fixture 1.6/fixture 1.55/in <sup>2</sup> . of pipe, 6.0/fan	520 ft. 345 ft <sup>2</sup> . 445 ft <sup>2</sup> . 240 ft <sup>2</sup> . 110 ft. 1860 ft. 300 ft. 160 ASF	98.9 67.4 71.8 95.7 17.3 17.6 60.2 1699.9 1699.9 1699.9 1699.9
Infiltration Q(cfm) = I	$x (A \Delta t + Bv^2)^{1/2}$		(ASHRAE 1989, P. 33.17, EQ.33)
<u>Vinter</u>	Summe	<u>er</u>	
2(cfm)= = L(0.01313 x 51 + 0.01 = L x 2.2 = 1100 x 2.2 = 2420 cfm		= L(0.0313 x : = L x 1.45 = //00 x 1.45	15 + 0.0157 × 10²) <sup>1/2</sup> 5 = /595 cfm
$2420 = \frac{2420}{27.516} = 0.09 \text{ CFM}$	/SF	Rate = <u>1595</u> 27516	= 0.06 CFM/SF

	OIW	PLE SP	non v		1011				
Space Name :	1 & 2	RH-2	9 2	M/1				C	9-13-90
Prepared By	: ENGG	APPLI	CATIO	NS CONS	SUL			602	2890201
Carrier Hour	cly Ana	lysis	Progr	am				Page	1 of 1
*****					*****	*****	*****	*****	*****
,		s			lass				
U-Value :	0.06	6	0.060	1.	060	Buildin	ng Weight	:	м
Weight :	10		L				actor		
Color :	ת	•	ח				l Shades		
			_			211002110	2 0	•	••
People : so	oft /ner	gon	= 50	0.0 50	rhedule	. = 3	Activity	, Level	= 2
Lights : W/	irc/ber	5011	- 30 - 1	0.0 50	shodule	- 1	Wetter	W::1+	= 1.20
riduca : M	BUIL	M	_ 1	. 72 DO	meante	- 4	- maccage	Mult.	- 1.20
: 173	xture	туре	=	1 Ked		not ven			
SPACE NAME	- 1 6			2 W/1					
SPACE NAME	- 1 ¤	2 Kn	-23	2 M/I	τ.	Tloom Amo	ea :	500	n eaft
Exposure		_	••				ia i		
Exposure	•	5						500.	o sqit
			^	2.5					
Wall Area	:								
Wall Area Glass Area	:	0.	0		0.0 E	Elements	: El,	Gr,In	
Wall Area Glass Area ******	: : :*****	0. *****	0 ****	*****	0.0 E	Elements	: El,	Gr,In	*****
Wall Area Glass Area	: : :*****	0. *****	0 ****	*****	0.0 E	Elements	: El,	Gr,In	*****
Wall Area Glass Area ************************************	: : :***** : : : : : : : : : : : : : :	0. ***** - Oth	0 **** er El	****** ectric	0.0 E	Elements	: El,	Gr,In	******
Wall Area Glass Area ************************************	: : : : : : : : : : : : : : : : : : :	0. ***** - Oth 	0 ***** er El  3.3	****** ectric	0.0 E	Elements	: El,	Gr,In	*****
Wall Area Glass Area ********* ADDITIONAL E W/sqft Total Watt	: : : : : : : : : : : : : : : :	0. ***** - Oth 	0 ***** er El  3.3 1,66	****** ectric 	0.0 E	Elements	: El,	Gr,In	******
Wall Area Glass Area *********** ADDITIONAL F W/sqft Total Watt Schedule M	: : ****** ELEMENT 	0. ***** - Oth 	0 ***** er El  3.3 1,66	****** ectric	0.0 E	Elements	: El,	Gr,In	*****
Wall Area Glass Area ********* ADDITIONAL E	: : ****** ELEMENT 	0. ***** - Oth 	0 ***** er El 3.3 1,66	ectric 2 0 3	0.0 E	Elements		*****	
Wall Area Glass Area ************* ADDITIONAL F	ELEMENT  S  S  S  S  S  S  S  S  S  S  S  S  S	0. ***** - Oth  = = = =  *****	0 ***** er El  3.3 1,66	ectric 2 0 3	0.0 E	Elements		*****	
Wall Area Glass Area ************ ADDITIONAL F	ELEMENT  S  S  S  S  S  S  S  S  S  S  S  S  S	0. ***** - Oth  = = = =  *****	0 ***** er El  3.3 1,66	ectric 2 0 3	0.0 E	Elements		*****	
Wall Area Glass Area *********** ADDITIONAL I W/sqft Total Watt Schedule N ***********	ELEMENT  S  S  S  S  S  S  S  S  S  S  S  S  S	0. ***** - Oth = = ***** - Gro	0 **** er El 3.3 1,66 *****	ectric 2 0 3	0.0 I	Elements		*****	
Wall Area Glass Area *********** ADDITIONAL F  W/sqft Total Watt Schedule N  *********** ADDITIONAL F	ELEMENT  S  NO.  EXEMPT  EXEMPT  EXEMPT  CATE  Area	0. ***** - Oth = = ***** - Gro	0 **** er El 3.3 1,66 *****	******* ectric 2 0 3 ******	0.0 I	Elements		*****	
Wall Area Glass Area ********** ADDITIONAL F  W/sqft Total Watt Schedule M  *********** ADDITIONAL F  Slab Floor Perimeter	ELEMENT  S  NO.  EXEMPT  EXEMPT  EXEMPT  CATE  Area	0. ***** - Oth = = ***** - Gro	0 **** er El 3.3 1,66	******* ectric 2 0 3 ****** 500.0	0.0 I	Elements		*****	
Wall Area Glass Area *********** ADDITIONAL F	ELEMENT  S  NO.  EXEMPT  EXEMPT  EXEMPT  CATE  Area	0. ***** - Oth = = ***** - Gro	0 **** er El 3.3 1,66	******* ectric 2 0 3 ******	0.0 I	Elements		*****	
Wall Area Glass Area *********** ADDITIONAL F Total Watt Schedule M *********** ADDITIONAL F Slab Floor Perimeter	ELEMENT  S  NO.  EXEMPT  EXEMPT  EXEMPT  CATE  Area	0. ***** - Oth = = ***** - Gro	0 **** er El 3.3 1,66	******* ectric 2 0 3 ****** 500.0	0.0 I	Elements		*****	
Wall Area Glass Area ************ ADDITIONAL F Total Watt Schedule N *********** ADDITIONAL F Slab Floor Perimeter Depth	ELEMENT  Area	0. ***** - Oth = = ***** - Gro = = *****	0 **** er El 3.3 1,66 *****	*******  ectric 2 0 3  *******  500.0 25.0 0.0	0.0 I	Elements		*****	
Wall Area Glass Area *********** ADDITIONAL F Total Watt Schedule M ********** ADDITIONAL F Slab Floor Perimeter Depth ********** ADDITIONAL F	ELEMENT Area  ******	0. ***** - Oth = = ***** - Gro = = ***** - Inf	0 **** er El 3.3 1,66 **** und *iltra /soft	****** ectric 2 0 3 500.0 25.0 0.0 ******	0.0 I	Elements		*****	
Wall Area Glass Area *********** ADDITIONAL F Total Watt Schedule M ********** ADDITIONAL F Slab Floor Perimeter Depth ********** ADDITIONAL F	ELEMENT Area  ******	0. ***** - Oth = = ***** - Gro = = ***** - Inf	0 **** er El 3.3 1,66 **** und *iltra /soft	****** ectric 2 0 3 500.0 25.0 0.0 ******	0.0 I	Elements ******** ********		*****	
Wall Area Glass Area *********** ADDITIONAL F  W/sqft Total Watt Schedule M  ********** ADDITIONAL F  Slab Floor Perimeter Depth  ************ ADDITIONAL F	ELEMENT  SHO.  CAPEA  Area  ******  ELEMENT  CAPEA  ******  ELEMENT  CAPEA  ******	0. ***** - Oth = = ***** - Gro = = ***** - Inf	0 **** er El 3.3 1,66 **** und /sqft /sqft	****** ectric 2 0 3 ****** 500.0 25.0 0.0 ******	0.0 I	Elements		*****	

Space Name : 3 Ri Prepared By : ENGO Carrier Hourly Ans	APPLICATIONS		09-13-90 6022890201 Page 1 of 1
Wall	ls Roof 66 0.060 00 L	Glass 1.060 Building Glass Fa	Weight : M ctor : 0.00 Shades ? N
Lights : W/sqft	= 2.56	Schedule = 3 Schedule = 4 Recessed, not vent	Wattage Mult. = 1.20
SPACE NAME = 3	RH-27 2 M/1	Floor Area	500 0
Glass Area :		0.0 Elements	
ADDITIONAL ELEMENT	r - Other Electi	:ic	~~~~~~~
W/sqft Total Watts Schedule No.	= 4.98 = 2,490 = 3		
**************************************	**************************************	******	*******
Slab Floor Area Perimeter Depth	= 2	00.0 sqft 5.0 ft 0.0 ft	
**************************************			********
Cooling : 0.	06 CFM/sqft = 09 CFM/sqft =	30 CFM 45 CFM	

			SPACE DES	CRIPTION	00 13 00
Space Name					09-13-90
Prepared By			CONSUL		6022890201
Carrier Hous	cly Analysi	s Program			Page 1 of 1
******	******	*****	****	******	*****
	Walls	Roof	Glass		
U-Value :	0.066	0.060	1.060		
Weight :	100	L		Glass Factor	: 1.00
Color :				Internal Shades	? N
People : so	ft/person	= 166.6	Schedul	e = 3 Activity	Level = 2
Lights : W	sqft	= 2.56	Schedul	e = 4 Wattage	Mult. = 1.20
: F	xture Type	= 1	Recessed	, not vented	
SPACE NAME	= 4 & 5	RH-26 2 1	4/1		
				Floor Area :	650.0 sqft
Exposure	•	SW		Roof Area :	
Wall Area					•
				Elements : El,	Gr.In
*******	*****	******	*****	******	*****
ADDITIONAL 1					
W/sqft	=	2.55			
Total Watt	:s =	1,660			
Schedule 1	io. =	3			
ADDITIONAL I		_	*****	******	*****
Slab Floor	Area	= 6	0.0 sqft		
Perimeter			26.0 ft		
			0.0 ft		
Depth		<b>-</b>			
				*****	******
ADDITIONAL I					
Cooling	: 0.06 C	FM/sqft =	3	9 CFM	
			-		
Heating	: 0.09 C	FM/sqit =	5	9 CFM	
Heating	: 0.09 C	FM/sqft = FM/sqft =	5	9 CFM 9 CFM	

Space Name: 6 RH-25 2 M/1	. 09-13-90 6022890201
Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program	Page 1 of 1
Walls Roof Glass	******
U-Value: 0.066 0.060 1.060 Building Weight	: M
Weight: 100 L Glass Factor	: 1.00
Color : D D Internal Shades	? N
People : sqft/person = 350.0 Schedule = 3 Activity	y Level = 2
Lights: W/sqft = 1.52 Schedule = 4 Wattage : Fixture Type = 1 Recessed, not vented	Mult. = 1.20
SPACE NAME = 6 RH-25 2 M/1	
Floor Area :	1,050.0 sqft
Exposure : SW E Roof Area : Wall Area : 126.0 0.0 Current	1,050.0 sqft
Wall Area : 126.0 0.0 Current	
Glass Area : U.U U.U Elements : El,	Gr,In
ADDITIONAL ELEMENT - Other Electric	
W/sqft = 2.37	
Total Watts = 2,490	
Schedule No. = 3	
******************	*****
ADDITIONAL ELEMENT - Ground	
Slab Floor Area = 1,050.0 sqft	
Perimeter = 42.0 ft	
Depth = 0.0 ft	
*****************	*******
ADDITIONAL ELEMENT - Infiltration	
Cooling : 0.06 CFM/sqft = 63 CFM	
Heating : 0.09 CFM/sqft = 95 CFM	
Typical : 0.09 CFM/sqft = 95 CFM	

			SPACE DESCI	RIPTION	
	: 9,10,11,12		2 1		09-13-90
Prepared By	y : ENGG APPI	ICATIONS	CONSUL	•	6022890201
Carrier Ho	irly Analysis	Program			Page 1 of 1
*****	******	*****	*****	*****	*****
,	Walls	Roof	Glass		
U-Value :	0.066	0.060	1.060	Building Weight	: M
Weight :		L		Glass Factor	: 1.00
Color :		D		Internal Shades	? N
				= 3 Activity	
Lights : N	<b>V</b> /sqft	= 1.60	Schedule	= 4 Wattage 1	Mult. = 1.20
: 1	Fixture Type	= 1	Recessed,	not vented	_
SPACE NAME	= 9,10,11,	12 RH-30	2 1		
			F)	loor Area :	897.0 sqft
Exposure	:	SE	E Ro	oof Area :	0.0 sqft
Wall Area	: 390	.0	0.0 Ct	ırrent	
Glass Area	: 0	.0	0.0 E	Lements : El,	In
******	******	*****	*****	*****	*****
ADDITIONAL	ELEMENT - Ot	her Elect:	ric		
W/sqft	=	4.63			
Total Wat	ts =	4,150			
Schedule	No. =	3			
*****	*****	****	*****	******	******
ADDITIONAL	ELEMENT - In	filtration	n		
	: 0.06 CF				
	: 0.09 CF			CFM	
		M/sqft =		CFM	

Space Name	• 106 Pi		SPACE DESC		09-13-90
•		APPLICATIONS	CONSIII		6022890201
		ysis Program			Page 1 of 1
	-	*********			*********
				******	
р •• ••• Т		Roof		Duilding Woight	. v
		0.060	1.060		
Weight :				Glass Factor	
Color :	D	D		Internal Shades	? N
People : 1	sqft/pers	on = 143.	8 Schedule	= 3 Activity	Level = 2
Lights : W	N/saft	= 2.5	O Schedule	= 4 Wattage	Mult. = 1.20
		ype =			
SDACE NAME	= 106	RH-22 2 1		~	
D17.02 MILE	_ 200			loor Area :	575.0 sqft
Exposure	:	SW	ER	oof Area :	0.0 sqft
Wall Area		0.0	0.0	urrent	_
Glass Area		0.0		lements : El,	In
*****		*****	*****	******	******
<b>A</b> DDITIONAL	ELEMENT ·	- Other Elec			•
W/saft		= 5.77			
		= 3,320			
	No.	•			
				******	
******				*******	*****
ADDITIONAL	ELEMENT ·	- Infiltrati 	on 		
		6 CFM/sqft			
Heating	: 0.0	9 CFM/sqft	= 52	CFM	
. Mumiasi	. 0.0	9 CFM/sqft	= 52	CFM	

	SIMPLE SPACE DESC	RIPTION	
Space Name: 203 RH-9	3 M		09-13-90
Prepared By : ENGG APPI	LICATIONS CONSUL		6022890201
Carrier Hourly Analysis			Page 1 of 1
*******	***********	*****	*******
Walls			
U-Value: 0.066	0.060 1.060	Building Weight	: M
Weight : 100	L	Glass Factor	: 1.00
Color : D	D	Internal Shades	? N
People : sqft/person	= 256.0 Schedule	e = 3 Activity L	evel = 2
Lights : W/sqft			
: Fixture Type	= 1 Recessed,	not vented	
antan with _ 202 nm			
SPACE NAME = 203 RH-		loor Area :	E12 0 soft
Exposure :		coof Area :	
Exposure : Wall Area : 0			512.0 Bq1c
		lements : El,In	
*********		********	******
ADDITIONAL ELEMENT - Ot	her Electric		
W/sqft =	3.24		
Total Watts =	1,660		
Schedule No. =	3		
***************			
ADDITIONAL ELEMENT - In		****	*****
ADDITIONAL ELEMENT - IN			
Cooling : 0.06 CF	M/sqft = 31	CFM	
Heating : 0.09 CF	M/sqft = 46	CFM	
Typical : 0.09 CF		CFM	
<b>5</b>			

**...** 

Space Name : 116A RH-11 3 M/1 09-13-90 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program Page 1 of 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.066 0.060 1.060
Weight: 100 L
Color: D D Building Weight : M Glass Factor : 1.00 Internal Shades ? N People : sqft/person = 400.0 Schedule = 3 Activity Level = 2 Lights : W/sqft = 1.20 Schedule = 4 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented \_\_\_\_\_ SPACE NAME = 116A RH-11 3 M/1 Floor Area : 400.0 sqft Exposure : NE E Roof Area : 400.0 Wall Area : 53.0 0.0 Current Glass Area : 0.0 0.0 Elements : Wl,El,Gr,In 400.0 sqft \*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Wall Weight = L (lb/sqft) Exposure = Color = D Net Area = Net Area = 187.0 sqft U-Value = 0.600 BTU/hr/sqft/F \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric \_\_\_\_\_\_ W/saft 2.08 = 830 = 3 Total Watts Schedule No. \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Ground Slab Floor Area = 400.0 sqft ----16.0 ft 0.0 ft Perimeter Depth \_\_\_\_\_\_ ADDITIONAL ELEMENT - Infiltration \_\_\_\_\_\_ Cooling : 0.06 CFM/sqft = 24 CFM Heating : 0.09 CFM/sqft = 36 CFM
Typical : 0.09 CFM/sqft = 36 CFM

09-13-90 Space Name: 112A RH-19 4 M/1 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.066 0.060 1.060 Building Weight: M
Weight: 100 L Glass Factor : 1.00
Color: D D Internal Shades? N People : sqft/person = 171.0 Schedule = 3 Activity Level = 2 Lights : W/sqft = 2.50 Schedule = 4 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented \_\_\_\_\_ SPACE NAME = 112A RH-19 4 M/1 Floor Area : 513.0 sqft E Roof Area : Exposure : NW E Roof Area : 513
Wall Area : 375.0 0.0 Current
Glass Area : 0.0 0.0 Elements : Gr,El,In 513.0 sqft \*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Ground Slab Floor Area = 513.0 sqft
Perimeter = 25.0 ft 25.0 ft 0.0 ft Depth \*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric \_\_\_\_\_\_ W/sqft 4.85 Total Watts = 2,490 Schedule No. = 3 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration Cooling : 0.06 CFM/sqft = 31 CFM Heating : 0.09 CFM/sqft = 46 CFM Typical : 0.09 CFM/sqft = 46 CFM

\*\*\*\*\*\*\*\*\*\*\*\*

Space Name				CRIPTION	
-E	: 208 & 208A	RH-20	4 M		09-13-90
Prepared By	: ENGG APPL	ICATIONS	CONSUL		6022890201
Carrier Hou	rly Analysis	Program			Page 1 of 1
******	******	******	*****	*****	*****
•	Walls	Roof	Glass		
U-Value :	0.066	0.060	1.060	Building Weight	: M
Weight :	100	L		Glass Factor	
-	D	D		Internal Shades	
	•			Inclinat bilades	• • •
Peonle · s	aft/person	= 305.0	Schedul	e = 3 Activity	Level = 2
	/sqft			e = 4 Wattage N	
ridura : M	/Bqrt				uit. = 1.20
* <b></b> .	ixture Type	_ 1	Recessed	, not vented	
CDACE NAME	= 208 & 20	חב-טם גפ	4 Y		
SPACE NAME	- 200 W 200	DA RH-20		Floor Area :	610.0 sqft
Exposure		NW			610.0 sqft
	: 458				ero.o adic
				Current	
Glass Area		.0		Elements : El,G	
	ELEMENT - Ot				
W/sqft	=======================================	2.72			·
Total Wat		1,660			
Schedule		3			
	NO	J			
******			*****	*****	******
**********	ELEMENT - Gr	ound			
*********** ADDITIONAL 1	ELEMENT - Gre	ound 	 10.0 sqft		
*********** ADDITIONAL 1 Slab Floo: Perimeter	ELEMENT - Gro  r Area :	ound = 6:	 10.0 sqft 50.5 ft		
*********** ADDITIONAL 1	ELEMENT - Gro  r Area :	ound 	 10.0 sqft		
********** ADDITIONAL 1 Slab Floo: Perimeter Depth	ELEMENT - Gro	ound = 6. = !	10.0 sqft 50.5 ft 0.0 ft		
********** ADDITIONAL 1 Slab Floo: Perimeter Depth	ELEMENT - Gro	ound = 6. = ! =	10.0 sqft 50.5 ft 0.0 ft		
********* ADDITIONAL 1 Slab Floo: Perimeter Depth ************************************	ELEMENT - Gro	ound = 6: = : = *******	10.0 sqft 50.5 ft 0.0 ft *******		
********* ADDITIONAL 1  Slab Floo: Perimeter Depth  ************ ADDITIONAL 1	ELEMENT - Gro	ound = 6: = = ******* filtration	10.0 sqft 50.5 ft 0.0 ft ********	******	

SIMPLE SPACE DESCRIPTION	
Space Name : 112 RH-21 4 M/1	09-13-90
Prepared By : ENGG APPLICATIONS CONSUL	6022890201
Carrier Hourly Analysis Program	Page 1 of 1
***************	******
Walls Roof Glass	
U-Value: 0.066 0.060 1.060 Building Weight	: M
Weight: 100 L Glass Factor	
Color : D D Internal Shades	
	-
People : sqft/person = 130.8 Schedule = 3 Activity	Level = 2
Lights: W/sqft = 2.45 Schedule = 4 Wattage M	ult. = 1.20
: Fixture Type = 1 Recessed, not vented	uit. – 1.20
: Fixture Type = I Recessed, not vented	
SPACE NAME = 112 RH-21 4 M/1	E02 0
Floor Area :	
Exposure : NW NE Roof Area : Wall Area : 383.0 307.0 Current	523.0 sqrt
Wall Area : 383.0 307.0 Current	
Glass Area : 0.0 0.0 Elements : El,G	r,In
**********	******
ADDITIONAL ELEMENT - Other Electric	
W/sqft = 6.35	
Total Watts = 3,320	
Schedule No. = 3	
******	*******
ADDITIONAL ELEMENT - Ground	
02200000000000000000000000000000000000	
Slab Floor Area = 523.0 sqft	
Perimeter = 46.0 ft	
Depth = 0.0 ft	
Depth = 0.0 ft	
Depth = 0.0 ft	******
************	******
	*******
**************************************	*******
ADDITIONAL ELEMENT - Infiltration  Cooling : 0.06 CFM/sqft = 31 CFM	********
**************************************	********

Space Name: 113 RH-16 4 M/1 09-13-90 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.066 0.060 1.060 Building Weight: M
Weight: 100 L Glass Factor : 1.00
Color: D D Internal Shades ? N People : sqft/person = 261.5 Schedule = 3 Activity Level = 2 Lights : W/sqft = 1.83 Schedule = 4 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented \_\_\_\_\_\_ SPACE NAME = 113 RH-16 4 M/1 Floor Area : 523.0 sqft Exposure : NW
Wall Area : 308.0
Glass Area : 0.0 NE Roof Area : 523.0 sqft 0.0 Current
0.0 Elements : El,Gr,In \*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric W/sqft = 3.17 Total Watts = 1,660 Schedule No. \*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Ground Slab Floor Area = 523.0 sqft Perimeter = Depth = 20.5 ft 0.0 ft Depth \_\_\_\_\_\_ \*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration Cooling : 0.06 CFM/sqft = 31 CFM Heating : 0.09 CFM/sqft = 47 CFM Typical : 0.09 CFM/sqft = 47 CFM

Space Name : Prepared By Carrier Hour	: ENGG APPL: Ly Analysis	CATIONS C	CONSUL		09-13-90 6022890201 Page 1 of 1
U-Value : Weight : Color :	Walls 0.066	Roof	Glass 1.060 Bu: Gla	ilding Weight ass Factor cernal Shades	: 1.00
Lights : W/s	gft	= 2.38		= 3 Activity = 4 Wattage M : vented	
SPACE NAME	= 109 & 110	RH-17		Area :	403 0 eaft
Exposure Wall Area Glass Area ************** ADDITIONAL EI	: 0: : 0:	.0 .0 ******	NE Roof 0.0 Curre 0.0 Eleme	Area :	0.0 sqft
W/sqft Total Watts Schedule No	3 =	4.12 1,660 3			
ADDITIONAL EI	EMENT - In	********* filtration	*****	******	*****
Heating		1/sqft =	24 CFN 36 CFN 36 CFN	1	

			9	TWALE	011				LOI						
Space Name	: 10	8 & 11	1 RH	-15	4 1	L							C	9-13	-90
Prepared B													602	2890	201
Carrier Ho													Page	10	f 1
		*****				****	***	***	***	***	***	***	****	***	***
)	ы	alls	72	oof	(	nage [									
U-Value :								Bu i	ldin	a We	iaht	,	•	м	
					•								: 1.		
Weight :											ades				
Color :		D		D				Inte	erna	1 Sr	ades	•	•	N	
People :	eaft /	nerson	. =	201.	5 5	Schedu	16	=	3	Act	ivit	v Le	evel	=	2
Lights :	wyrc/ w/aaf	+ -	_	2 3	Ω .	chedu	10	_	Λ	Wat	+200	Mul	1+	= 1	
											cage	. 1142			
	Fixtu	re Typ			T Ve	cesse	u,	noc	ven	Leu					
SPACE NAME		108 &	111	DH-15		1									
SPACE NAME	_	100 @		M1 13	•	-	r:	005	Are		•		403	o sq	f+
B	_		NW			NE								O sq	
Exposure										•	•		0.	o by	
Wall Area						0.0									
Glass Area	_		0.0			0.0									
*****		****	****	***		****	***	***	***	***	***	***	****	****	***
ADDITIONAL	ELEM	ENT -	Other	Elec	tric	7									
W/sqft				A 12											
Total Wa															
			_	-											
Schedule	No.	=		3											
Schedule	No.	=  *****	****	3  ****	 ***1		 ***	***		 ***	***	***	 ****	****	 ***
*******	 ****	 *****	 ****	****	 ****	****	 ***	***	 ***	***	****	***	****	****	***
Schedule ******** ADDITIONAL	 ****	 *****	***** Infil	****	**** on	****	 ***	***	 ***	***	****	****	****	****	***
********* ADDITIONAL	**** ELEM	***** ENT -		***** trati		****	 *** 	*** CFM	 ****	****	****	****	****	****	***
*******	 **** ELEM 	***** ENT - 0.06	CFM/s	***** trati	 =	****	 ***  24 36	*** CFM		****	****	****		****	***

Space Name : 114 & 115 RH-14 4 1 09-13-90 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Carrier Hourly Analysis Program Page 1 of 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.066 0.060 1.060
Weight: 100 L
Color: D D Building Weight : M Glass Factor : 1.00 Internal Shades ? N People : sqft/person = 300.0 'Schedule = 3 Activity Level = 2 Lights : W/sqft = 2.13 Schedule = 4 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented SPACE NAME = 114 & 115 RH-14 4 1 Floor Area : 300.0 sqft Exposure : NW NE Roof Area : COMMINITIES : C 0.0 sqft \*\*\*\*\* ADDITIONAL ELEMENT - Ground Slab Floor Area = 300.0 sqft Perimeter 15.0 ft 0.0 ft = Depth \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric ------W/sqft 2.77 Schedule No. = 2 \*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration Cooling : 0.06 CFM/sqft = 18 CFM Heating : 0.09 CFM/sqft = 27 CFM Typical : 0.09 CFM/sqft = 27 CFM

S W	20	0 210 6			PACE DE		•	09-13-90
Space Nam								
Prepared :					CONSUL			6022890201
Carrier H	_	_	-	gram				Page 1 of 1
*****	*****	*****	****	*****	*****	*****	*****	*****
		alls						
U-Value:	0	.066	0.06	50	1.060	Buil	ding Weight	: M
Weight :		100	I			Glas	s Factor	: 1.00
Color :		D	I	)		Inte	ernal Shades	? N
People :	sqft/	person	= 4	50.0	Schedu	le =	3 Activity	Level = 2
Lights :	W/sqf	t	=	1.06	Schedu	le =	4 Wattage	Mult. = 1.20
		re Type			Recesse			
SPACE NAM	 E =	209,210	& 210	A RH-	-18 4 M			
		•				Floor	Area :	900.0 sqft
Exposure	:		NW		NE	Roof A	rea :	900.0 sqft
Wall Area	:		0.0		0.0	Currer	it	_
Glass Area	a :		0.0		0.0	Elemen	ts : El,	In
******	****	*****	*****	****	*****	*****	******	*****
ADDITIONA	L ELEM	ENT - O	ther E	Electr	ic			
W/sqft		=	1.	84				
Total Wa			1,6	60				
	atts	=	1,6	3 3				
Total Was	atts e No.	=		3	*****	 *****	*****	
Total Was	atts e No. 	= =  ****	****	3		*****	******	******
Total Was Schedule	atts e No. ***** L ELEM	= +***** ENT - I	****** nfiltr	3 ***** ation	!	54 CFM	******	******
Total Was Schedule	atts e No. ***** L ELEM	= = ****** ENT - I  0.06 C 0.09 C	****** nfiltr FM/sqf	3 ***** ration t =	<u>.</u>	54 CFM	******	******

10-08-90 Name : AHU-2 6022890201 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 \*\*\*\*\*\*\*\*\* 1. SYSTEM NAME AND TYPE System Name = AHU-2 System Class = Constant Volume
System Type = (CV/RH) Constant Volume w/ Terminal Reheat Number of Zones = 9 \*\*\*\*\*\*\*\*\*\*\*\* SPACE SELECTION (see separate printout) \*\*\*\*\*\*\*\*\*\*\*\* 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA Thermostat Setpoints Ventilation Operation Period Cooling Heating Dampers 75.0 F 68.0 F OPEN 75.0 F 68.0 F OPEN Occupied Unoccupied Weekday : Occupied Period Begins at 0 ; Duration = 24 hrs
Saturday : Occupied Period Begins at 0 ; Duration = 24 hrs
Sunday : Occupied Period Begins at 0 ; Duration = 24 hrs
Design Day : Occupied Period Begins at 0 ; Duration = 24 hrs \*\*\*\*\*\*\*\*\*\* 4. SUPPLY, VENTILATION, RETURN AIR DATA SUPPLY AIR = 15410.00 CFM Supply air flow rate = 15410.00 CFM Supply temperature control = 1 Constant Supply air flow rate VENTILATION AIR Nominal ventilation flow rate = 3852.00 CFM Minimum ventilation flow rate = 3852.00 CFM = 5 % of vent air Damper leak rate RETURN AIR Zone exhaust air flow rate = 100.00 % of vent. air Zone exhaust fan power = 0.0 kW Is a return plenum used ? N

Name : AHU-2 10-08-90 Carrier Hourly Analysis Program 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 2 of 2 \*\*\*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN = 7:Backward inclined or air foil Type = 1.75 in wg Static Efficiency 54 % = Configuration 1 Draw-thru = RETURN FAN = 1:(Fan does not exist) Type \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL Setpoint temperature = 60.0 F OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL Upper RH setpoint = 50 % Lower RH setpoint = 0 % \*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050 Type of supplemental heating = 1 Not Used \*\*\*\*\*\*\*\*\*\*\*

AIR SYSTEM DESCRIPTION 10-08-90 Name : AHU-3 Carrier Hourly Analysis Program 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 \*\*\*\*\*\*\*\*\*\* 1. SYSTEM NAME AND TYPE System Name = AHU-3
System Class = Constant Volume
System Type = (CV/RH) Constant Volume w/ Terminal Reheat
Number of Zones = 10 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 2. SPACE SELECTION (see separate printout) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA \_\_\_\_\_\_ OperationThermostat SetpointsVentilationPeriodCoolingHeatingDampers 
 Occupied
 75.0 F
 68.0 F
 OPEN

 Unoccupied
 75.0 F
 68.0 F
 OPEN
 Weekday : Occupied Period Begins at 0; Duration = 24 hrs
Saturday : Occupied Period Begins at 0; Duration = 24 hrs
Sunday : Occupied Period Begins at 0; Duration = 24 hrs
Design Day : Occupied Period Begins at 0; Duration = 24 hrs \_\_\_\_\_\_ \*\*\*\*\* 4. SUPPLY, VENTILATION, RETURN AIR DATA SUPPLY AIR Supply air flow rate = 17175.00 CFM
Supply temperature control = 1 Constant
ENTILATION AIR VENTILATION AIR Nominal ventilation flow rate = 4293.00 CFM
Minimum ventilation flow rate = 4293.00 CFM = 5 % of vent air Damper leak rate RETURN AIR Zone exhaust air flow rate = 4293.00 CFM

\*\*\*\*\*\*\*\*\*\*\*

Zone exhaust fan power = 0.0 kW Is a return plenum used ? N

	SIMPLE SPACE DESC	RIPTION	
Space Name: 104 RH-23	2 1		09-13-90
Prepared By : ENGG APPL			6022890201
Carrier Hourly Analysis			Page 1 of 1
**********	*****	*****	_
	Roof Glass		
U-Value: 0.066		Ruilding Weight	. M
		Glass Factor	• 1 00
Weight: 100	ם ב	Internal Shades	
Color : D	ע	Internal Shades	r N
	045 0 0-1-1-1	_ 3 %	2
People : sqft/person	= 247.0 Schedule	= 3 ACTIVITY L	ever = 2
Lights : W/sqft	= 2.59 Schedule	e = 4 wattage Mu.	16. = 1.20
: Fixture Type	= 1 Recessed,	not vented	
SPACE NAME = 104 RH-	23 2 1	_	
		loor Area :	
Exposure :	SW E F	Roof Area :	0.0 sqft
Wall Area : 0		Current	
Glass Area : 0		: El,In	
******	*****	**********	*****
ADDITIONAL ELEMENT - Ot	her Electric		
W/sqft =	3.36		
Total Watts =			
Schedule No. =			
*****	*****	*******	******
ADDITIONAL ELEMENT - In	filtration		
Cooling : 0.06 CF	M/saft = 15	CFM	
Heating : 0.09 CF	M/saft = 22	CFM	
Typical : 0.09 CF	M/sqft = 22		
Typical : 0.09 Cr	m/eqrt - 22		
			<del></del>

SIMPLE SPACE DESCRIPTION	
Space Name: 107 RH-24 2 1	09-13-90
Prepared By : ENGG APPLICATIONS CONSUL	6022890201
	Page 1 of 1
******************	******
Walls Roof Glass	
U-Value: 0.066 0.060 1.060 Building Weight	: M
Weight: 100 L Glass Factor	: 1.00
	? N
People : sqft/person = 143.8 Schedule = 3 Activity Lev	vel = 2
Lights: W/sqft = 2.23 Schedule = 4 Wattage Mulf	t. = 1.20
: Fixture Type = 1 Recessed, not vented	
SPACE NAME = 107 RH-24 2 1	
Floor Area :	575.0 sqft
Exposure : SW E Roof Area :	0.0 sqft
Wall Area : 0.0 0.0 Current	_
Glass Area : 0.0 0.0 Elements : El,In	
******************	*******
ADDITIONAL ELEMENT - Other Electric	
W/sqft = 5.77	
Total Watts = 3,320	
Schedule No. = 3	
*****************	******
ADDITIONAL ELEMENT - Infiltration	
Cooling : 0.06 CFM/sqft = 35 CFM	<b></b>
Heating : 0.09 CFM/sqft = 52 CFM	
Typical : 0.09 CFM/sqft = 52 CFM	

Prepared By Carrier Hou	: 217-220 F y : ENGG APPI urly Analysis	ICATIONS (			09-13-90 6022890201 Page 1 of 1
		Roof	Glass		
	0.066	0.060	1.060	Building Weight	
Weight :	100	L		Glass Factor	
Color :	D	D		Internal Shades	? N
People : s	sqft/person	= 246.5	Schedule	= 3 Activity	Level = 2
Lights : V	N/sqft	= 1.46	Schedule	= 4 Wattage M	iult. = 1.20
	Fixture Type				
SPACE NAME	= 217-220	RH-28 2	м		
			F	loor Area :	986.0 sqft
Exposure	:	SE		oof Area :	986.0 <b>s</b> qft
Wall Area	: 465	5.0	0.0 C	urrent	
Glass Area	: 0	0.0	0.0 E	lements : El,I	n
******		*****	*****	******	*****
ADDITIONAL	ELEMENT - Ot	her Elect:	ric		
W/sqft	=	3.37			
Total Wat	ts =	3,320			
Schedule	No. =	3			
*****	*****	*****	******	******	*****
ADDITIONAL	ELEMENT - In	filtration	n		
	: 0.06 CF				
Heating	: 0.09 CF	M/sqft =	89	CFM	
Typical	. 0.09 CF	M/saft =	89	CFM	

Prepared By		APPLICA	ATIONS	CONSUL	ı			09-13-9 602289020 Page 1 of
Carrier Hour						*****	******	******
*********	Walls		Roof	Glas				
U-Value :	0.066	_	.060	1.06	_	Buildin	a Weight	: M
Weight :	100		L	1.00			actor	
Color :	D D		D				l Shades	
			•			2		• •
People : so	oft/perso	on =	262.7	Sche	dule	= 3	Activity	Level =
Lights : W/			1.22	Sche	dule	= 4	Wattage	Mult. = 1.2
	xture T					not ven	_	
SPACE NAME	= 119	RH-1	3 M/1				•	
						oor Are		788.0 sqft
Exposure	:	NE				of Area	:	788.0 sqft
Wall Area	:	472.5				rrent		
Glass Area	:	0.0					: El,	
								*********
******					****	*****	*****	
ADDITIONAL B					****	*****	*****	
ADDITIONAL E		- Other	Elect				********* 	
ADDITIONAL I	ELEMENT	- Other	TElect				*********	
ADDITIONAL F	ELEMENT ·	- Other	3.16 2,490				******	
ADDITIONAL I	ELEMENT ·	- Other	TElect				*****	
ADDITIONAL F	ELEMENT ·	- Other	3.16 2,490		· * * * * * * * * * * * * * * * * * * *	. * * * * * * * * * * * * * * * * * * *	*****	****
ADDITIONAL F	ELEMENT	- Other	3.16 2,490 3		·****	******	*****	******
W/sqft Total Watt Schedule I	ELEMENT	- Other	3.16 2,490 3	ric	****	·******	******	******
W/sqft Total Watt Schedule I	ELEMENT  NO.  ******* ELEMENT	- Other	3.16 2,490 3 ******	ric  ******	 *****	·******	******	******
W/sqft Total Watt Schedule I *********** ADDITIONAL I Slab Floor Perimeter	ELEMENT  NO.  ******* ELEMENT	- Other	3.16 2,490 3 ******	ric ****** 88.0 s	 ***** 	*******  ******	*****	*****
W/sqft Total Watt Schedule I	ELEMENT  NO.  ******* ELEMENT	- Other	3.16 2,490 3 ******	ric  ******	 ***** 	*****	*****	*****
W/sqft Total Watt Schedule I ************************************	ELEMENT  *******  C Area	- Other	3.16 2,490 3 ******	*******	****** sqft ft	*****	******	******
W/sqft Total Watt Schedule I *********** ADDITIONAL I Slab Floor Perimeter	ELEMENT  *******  C Area	- Other	3.16 2,490 3 ******	*******	****** sqft ft	*****	******	******
W/sqft Total Watt Schedule I *********** ADDITIONAL I Slab Floor Perimeter Depth *********** ADDITIONAL I	ELEMENT  ******  C Area	- Other	3.16 2,490 3 *******	******* 88.0 s 56.5 f 0.0 f	sqft ft t+****	*****	******	******
W/sqft Total Watt Schedule I ************************************	ELEMENT  ******  C Area  *******  ELEMENT  *******	- Other	3.16 2,490 3 *******	******* 88.0 s 56.5 f 0.0 f	sqft ft t+****	***************	******	******

09-13-90 Space Name : 117,118 RH-7,4 3 M/1 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Carrier Hourly Analysis Program Page 1 of 1 \*\*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.066 0.060 1.060 Building Weight: M
Weight: 100 L Glass Factor : 1.00
Color: D D Internal Shades ? N People : sqft/person = 185.7 Schedule = 3 Activity Level = 2 Lights : W/sqft = 1.48 Schedule = 4 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented SPACE NAME = 117,118 RH-7,4 3 M/1Floor Area : 1,300.0 sqft
E Roof Area : 1,300.0 sqft \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric W/sqft = 4.47 Total Watts = 5,810 Schedule No. ADDITIONAL ELEMENT - Ground Slab Floor Area = 1,300.0 sqft Perimeter = Depth = 52.0 ft 0.0 ft Depth \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration Cooling : 0.06 CFM/sqft = 78 CFM Heating : 0.09 CFM/sqft = 117 CFM Typical : 0.09 CFM/sqft = 117 CFM

			SPACE DESC		
Space Name	: 101 RH-2	3 1			09-13-90
Prepared B	y : ENGG APP	LICATIONS	CONSUL		6022890201
Carrier Ho	urly Analysi	s Program			Page 1 of 1
*****	******	******	******	*****	******
•	Walls	Roof	Glass		
U-Value :	0.066	0.060	1.060	Building Weight	: M
Weight :	100	L		Glass Factor	: 1.00
	D	D		Internal Shades	? N
People :	sqft/person	= 237.7	Schedule	= 3 Activity	Level = 2
Lights : 1	W/sqft	= 2.02	Schedule	= 4 Wattage N	fult. = 1.20
	Fixture Type				
CDACE NAME	= 101 RH				
BIACE NAME	- 101 K	. 2 3 1	F	loor Area :	713.0 sqft
Exposure	:	NE			0.0 sqft
Wall Area	:	0.0	0.0 C	urrent	
		0.0	0.0 E	lements : El, I	[n
******	*****	******	*****	******	*******
*****					
	ELEMENT - C	ther Elect	ric		
ADDITIONAL			r1C		
ADDITIONAL 	ELEMENT - C	3.49	ric		
ADDITIONAL W/sqft Total Wa	E	3.49	ric		
ADDITIONAL W/sqft Total Wa	= tts =	3.49 2,490	ric		
W/sqft Total Wat Schedule	= tts = No. =	3.49 2,490 3	*****	******	******
W/sqft Total Wat Schedule	= tts =	3.49 2,490 3	*****	*******	*****
W/sqft Total War Schedule ************ ADDITIONAL	= tts = No. = ***********************************	3.49 2,490 3 	********* n		******
W/sqft Total War Schedule ************ ADDITIONAL Cooling Heating	tts = No. = ************************************	3.49 2,490 3 	********* n 		******

Space Name			3 3	M	SPACE DE	BCKIFI	1014			9-13-90
Prepared B					CONSUL					2890201
Carrier Ho	urly !	Analys	is Pr	ogram					Page	1 of 1
******	****	*****	****	*****	*****	****	****	*****	****	*****
	W	alls	R	oof	Glass					
U-Value :	0	.066	0.	060	1.060	Bui	lding	Weight	: 1	M
Weight :		100		L			-	actor		00
Color :		D		D		Int	ernal	L Shades	?	N
People : 1	sqft/	person	=	270.0	Schedu	le =	3	Activity	Level	= 2
Lights : V	i/sqf	t	=	1.77	Schedu	le =	4	Wattage	Mult.	= 1.20
					Recesse					
SPACE NAME	= ;	201 R	 н-3	 3 м						
						Floor	Area	a :	270.0	0 sqft
Exposure	:		NE		E	Roof	Area	:	270.0	0 sqft
Wall Area	:		0.0		0.0	Curre	nt			_
Glass Area	:		0.0		0.0	Eleme	nts	: El,	In	•
*****	****	****	****	*****	*****	****	****	*****	*****	*****
ADDITIONAL	ELEM	ENT -	Other	Elect	ric					
W/sqft		=		 6.15						
Total Wat	ts	=	1	,660				•		
Schedule				3						
*****	****	****	****	*****	******	*****	****	*****	*****	*****
ADDITIONAL	ELEM	ENT -	Infil	tratio	n 					
Cooling						16 CFM				<b></b>
Heating						24 CFM				
Typical	:	0.09	CFM/s	qft =		24 CFM				
********										

Space Name: 202,203 RH-5,9 3 M 09-13-90 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Carrier Hourly Analysis Program Page 1 of 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.066 0.060 1.060 Building Weight: M
Weight: 100 L Glass Factor : 1.00
Color: D D Internal Shades ? N People : sqft/person = 470.0 Schedule = 3 Activity Level = 2 Lights : W/sqft = 2.60 Schedule = 4 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented \_\_\_\_\_\_ SPACE NAME = 202,203 RH-5,9 3 MFloor Area : 982.0 sqft Exposure : NE E Roof Area : Wall Area : 0.0 0.0 Current Glass Area : 0.0 0.0 Elements : El,In 982.0 sqft \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric W/sqft Total Watts 3.38 = 3,320 = Schedule No. ADDITIONAL ELEMENT - Infiltration Cooling : 0.06 CFM/sqft = 88 CFM 88 CFM Heating : 0.09 CFM/sqft = Typical : 0.09 CFM/sqft =

\*\*\*\*\*\*\*

Carrier Hou							*****	_	1 of 1
					Glass				
U-Value :	0.0	66	0.06	50	1.060				
Weight :	10	00	I	_			ss Factor		00
Color :	I	)	I	)		Inte	ernal Shad	es ?	N
People : s	qft/pe	rson	=	72.0	Schedu	le =	3 Activ	ity Level	= 2
Lights : W	/sqft		=	4.44	Schedu	le =	4 Watta	ge Mult.	= 1.20
: F	'ixture	Type	=	1	Recesse	d, not	vented		
SPACE NAME	= 102	2 RH-	6 3	1					
							Area :		
Exposure							Area :	0.	0 sqft
Wall Area					0.0				
Glass Area	:	C	.0				nts : 1	El,In	
*****		****	****	****		****	****	******	****
ADDITIONAL	ELEMEN:	r - Ot	her E	Electi	ric 				
W/sqft									
Total Wat	ts	=	ε						
Schedule	No.	=		3					
******	****	****	****	****	*****	****	****	*****	****
ADDITIONAL	ELEMEN:	r – In	filtz	ation	1				
Cooling									
Heating	: 0.	.09 CF	M/sqf	t =		6 CFM			
						6 CFM			

Conses Mans					
Space Name	: 105 RF	I-8 3 1			09-13-90
Prepared By	: ENGG A	APPLICATIONS	CONSUL		6022890201
		sis Program			Page 1 of 1
******			******	*****	*****
	Walls	Roof	Glass		
U-Value:				Building Weight	: M
Weight :		L	2000	Glass Factor	
•	D			Internal Shades	
color .	D	D		Internal Bhades	
Pannia . s	aft /norse	n = 123 E	Schedule	= 3 Activity	Tevel = 2
Tichte . W	drc/berec	/// - 123.5	Schedule	= 4 Wattage	Mult - 1 20
					Mult 1.20
: F	ixture Ty	<i>r</i> pe = 1	кесеввеа,	not vented	
	_ 105	nu 0 2 1			
SPACE NAME	= 105	Kn-8 3 1		1 a a u 1 u a a	047 0
				loor Area :	
Exposure				oof Area :	0.0 sqit
Wall Area	:	0.0	0.0 C		
Glass Area	:	0.0		lements : El,	
Glass Area *******		0.U ******		lements : El, **********	
*****	*****	0.0 ********** • Other Elect	******	•	
*********** ADDITIONAL	******* ELEMENT -	·***********  Other Elect	******	•	
********* AANOITIONAL 	******* ELEMENT - 	- Other Elect	******	•	
********* AANOITIONAL 	******* ELEMENT - 	·***********  Other Elect	******	•	
********* AANOITIONAL 	******* ELEMENT -  = ts =	- Other Elect - 6.72 - 1,660	******	•	
********* ADDITIONAL W/sqft Total Wat	******* ELEMENT -  = ts =	- Other Elect - 6.72 - 1,660	******	•	
********* ADDITIONAL W/sqft Total Wat	******* ELEMENT -  = ts =	- Other Elect - 6.72 - 1,660	******	•	
********* ADDITIONAL W/sqft Total Wat Schedule	*********  ELEMENT  ts = No. = *******	- Other Elect - 6.72 - 1,660 - 3	************************************	•	
********* ADDITIONAL W/sqft Total Wat Schedule	*********  ELEMENT  ts = No. = *******	- Other Elect - 6.72 - 1,660	************************************	•	
********* ADDITIONAL  W/sqft Total Wat Schedule  ********** ADDITIONAL	*********  ELEMENT -  =  ts =  No. =  ********  ELEMENT -	- Other Elect - 6.72 - 1,660 - 3	**************************************	*****	
******** ADDITIONAL  W/sqft Total Wat Schedule  ********* ADDITIONAL	*********  ELEMENT -  ts =  No. =  ********  ELEMENT -  : 0.06	- Other Elect - 6.72 - 1,660 - 3	**************************************	**************************************	

Space Name Prepared By Carrier Hou	: ENGG	7 & 212-2 APPLICATI ysis Prog	15 RH ONS CO	-10	SCRIPTION		60: <b>Pa</b> ge	09-13-90 22890201 e 1 of 1
*******			*****	*****	******	*****	****	******
<b>,</b>	Walls		_	Glass	D., 43.44	Weight	_	v
	0.066		•	1.060		ng Weight		
Weight :	100					Factor		
Color :	D	D			Intern	al Shades	3	N
People : s	qft/pers	on = 1	82.6	Schedu:	le = 3	Activity	y Level	= 2
Lights : W						Wattage		
		ype =			d, not ve	_		
SPACE NAME	= 204-	207 & 212	-215	 RH-IO		# C C C C C C C C		
					Floor Ar	ea :	1,643	.0 sqft
Exposure	:	NE		E	Roof Are	a :	1,643	.0 sqft
Wall Area		0.0		0.0	Current		-	_
Glass Area		0.0				: Li,	El.In	
*****	-		****			*****		*****
ADDITIONAL	ELEMENT ·	- Lights						
W/sqft		= 0.	22	Schedu:	le No.		=	4
Total Wat	ts :	= 3	61 1	Wattage	Multipl	ier =	= 1.0	00
Fixture T	ype :			ee-han				
********** ADDITIONAL  W/sqft Total Wat	ELEMENT ·	- Other E 	lectrion		******	******	****	*****
Schedule	No.		3					
************	******** ELEMENT -	******** - Infiltr	***** ation	*****	*****	*****	*****	
				*****	*****	******		
Cooling	: 0.00	CFM/sqf	 t =		9 CFM	******	*****	
	: 0.00	CFM/sqf	 t = t =	14	99 CFM 18 CFM 18 CFM	******	****	

Space Name: 116A,116 RH-11,12 3 M/1 09-13-90 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Carrier Hourly Analysis Program Page 1 of 1 \*\*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.066 0.060 1.060 Building Weight: M
Weight: 100 L Glass Factor : 1.00
Color: D D Internal Shades ? N People : sqft/person = 325.0 Schedule = 3 Activity Level = 2 Lights : W/sqft = 1.15 Schedule = 4 Wattage Mult. = 1.20 : Fixture Type = 1 Recessed, not vented \_\_\_\_\_\_ SPACE NAME = 116A, 116 RH-11, 12 3 M/1Floor Area : 975.0 sqft 975.0 sqft \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Wall \_\_\_\_\_\_ Weight = L (lb/sqft) Exposure = Color = D Net Area = 187.0 sqft U-Value = 0.600 BTU/hr/sqft/F \*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric' W/saft = 3,320 = 3 Total Watts Schedule No. \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Ground Slab Floor Area = 975.0 sqft
Perimeter = 39.0 ft 39.0 ft 0.0 ft Depth ADDITIONAL ELEMENT - Infiltration Cooling : 0.06 CFM/sqft = 59 CFM Heating : 0.09 CFM/sqft = 88 CFM
Typical : 0.09 CFM/sqft = 88 CFM

SIMPLE SPACE DESCRIPTION	
Space Name : 216 RH-13 3 M	09-13-90
Prepared By : ENGG APPLICATIONS CONSUL	6022890201
Carrier Hourly Analysis Program	Page 1 of 1
********************	*******
Walls Roof Glass	
U-Value: 0.066 0.060 1.060 Building Weight	: M
Weight: 100 L Glass Factor	: 1.00
Color : D D Internal Shades	? N
People : sqft/person = 166.7 Schedule = 3 Activity	Level = 2
Lights: W/sqft = 2.88 Schedule = 4 Wattage M	ult. = 1.20
: Fixture Type = 1 Recessed, not vented	
SPACE NAME = 216 RH-13 3 M	
Floor Area :	500.0 sqft
Exposure : NE E Roof Area :	
Wall Area : 300.0 0.0 Current	•
Glass Area : 0.0 0.0 Elements : El,I	n.Gr
************	
ADDITIONAL ELEMENT - Other Electric	
W/sqft = 4.98	
Total Watts = 2,490	
Schedule No. = 3	
*************	*****
ADDITIONAL ELEMENT - Infiltration	
Cooling : 0.06 CFM/sqft = 30 CFM	
Heating : 0.09 CFM/sqft = 45 CFM	
Typical : 0.09 CFM/sqft = 45 CFM	
Typical . V.O. Cin/sqic - 45 Cin	
*************	******
ADDITIONAL ELEMENT - Ground	
***************************************	
Slab Floor Area = 500.0 sqft	
2142 11001 MICH - 300:0 BUIL	
Perimeter = 20.0 ft	
•	

10-08-90 Name : AHU-3 6022890201 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 2 of 2 \*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN = 7:Backward inclined or air foil Type = 1.75 in wg Static 54 % Efficiency = Configuration = 1 Draw-thru RETURN FAN = 1: (Fan does not exist) Type \*\*\*\*\*\*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL Setpoint temperature = 60.0 F OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL Upper RH setpoint = 50 %
Lower RH setpoint = 0 % \*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050

Type of supplemental heating = 1 Not Used \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

10-08-90 Name : AHU-4 6022890201 Carrier Hourly Analysis Program Page 1 of 2 Prepared By : ENGG APPLICATIONS CONSUL \*\*\*\*\*\*\*\*\*\*\* 1. SYSTEM NAME AND TYPE System Name = AHU-4
System Class = Constant Volume
System Type = (CV/RH) Constant Volume w/ Terminal Reheat Number of Zones = 8 \*\*\*\*\*\*\*\*\*\*\*\* 2. SPACE SELECTION (see separate printout) \*\*\*\*\*\*\*\*\*\*\*\* 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA Ventilation Operation Thermostat Setpoints peration Thermostat Setpoints
Period Cooling Heating Dampers \_\_\_\_\_\_ 
 Occupied
 75.0 F
 68.0 F
 OPEN

 Unoccupied
 75.0 F
 68.0 F
 OPEN
 Weekday : Occupied Period Begins at 0 ; Duration = 24 hrs
Saturday : Occupied Period Begins at 0 ; Duration = 24 hrs
Sunday : Occupied Period Begins at 0 ; Duration = 24 hrs
Design Day : Occupied Period Begins at 0 ; Duration = 24 hrs \_\_\_\_\_\_ \*\*\*\*\*\*\*\*\*\*\*\* 4. SUPPLY, VENTILATION, RETURN AIR DATA SUPPLY AIR = 10565.00 CFM Supply air flow rate Supply air flow rate Supply temperature control 1 Constant VENTILATION AIR Nominal ventilation flow rate = 2641.00 CFM Minimum ventilation flow rate = 2641.00 CFM = 5 % of vent air Damper leak rate RETURN AIR Zone exhaust air flow rate = 2641.00 CFM Zone exhaust fan power = 0.0 kW Is a return plenum used ? N

\*\*\*\*\*\*\*\*\*\*\*\*

10-08-90 Name: AHU-4 6022890201 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 2 of 2 \*\*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN 2:Forward curved Type = 1.75 in wg Static Efficiency 54 % Configuration = 1 Draw-thru RETURN FAN = 1: (Fan does not exist) Type \*\*\*\*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL Setpoint temperature = 60.0 F OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL Upper RH setpoint = 50 %
Lower RH setpoint = 0 % \*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050

Type of supplemental heating = 1 Not Used 

### PLANT DESCRIPTIONS

02-05-91 Plant : #2 OIL FIRED STM BOILER 6100190202 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\* PLANT NAME AND TYPES = Individual Plants Class Name = #2 OIL FIRED STM BOILER
Cooling Plant Type = Water Cooled Centrifugal
Heating Plant Type = Combustion \*\*\*\*\*\*\*\*\*\*\* 2 AIR SYSTEM SELECTION Mult | Air System Name Air System Name \_\_\_\_\_\_\_ AHU-3 AHU-2 1 1 AHU-4 \*\*\*\*\*\*\*\*\*\*\* 3a COOLING PLANT DATA (Water Cooled Centrifugal) PLANT DATA = 94.93 Ton Estimated maximum cooling coil load Capacity at 85.0 F condenser entering water = 148.00 Ton Input power rate at 85.0 F condenser entering water = 0.850 kW/Ton ? N Is chilled water reset used Number of sequenced chillers = HEAT SINK DATA = Open Tower Heat sink type = 60.0 F Minimum condenser entering water temperature \*\*\*\*\*\*\*\*\*\*\*\*\*\* 3b HEATING PLANT DATA (Combustion) Estimated maximum heating coil load = 933.14 MBH = Fuel Oil Fuel type = 1016.4 MBH Rated plant output = Hydronic Type of heating Is plant efficiency computer generated N = Seasonal plant efficiency \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 4 PUMP SYSTEM DATA 60.00 ft wg Chilled water pumping system head Chilled water pumping system delta T = 10.00 FCondenser water pumping system head = 30.00 ft wq Condenser water pumping system delta T = 10.00 F = 30.00 ft wg Hot water pumping system head = 20.00 F Hot water pumping system delta T

\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### BUILDING DESCRIPTION

Building : BUILDING #327 02-05-91 6100190202 Prepared By: ENGG APPLICATIONS CONSUL Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\* . BUILDING INPUTS = BUILDING #327 BUILDING NAME MISCELLANEOUS ELECTRIC 0.0 kW Maximum power 1 Power schedule DOMESTIC WATER HEATING Is a domestic how water system used 60.0 gal Maximum hourly hot water use Hot water schedule 1 = 55.0 F Average entering water temperature 140.0 F Average hot water supply temperature = 2 : Combustion Heating plant type = 2 : Fuel Oil Fuel type = 1016.4 MBH Plant capacity Is plant efficiency computer generated ? Annual plant efficiency OTHER INPUTS Additional building floor area 0.0 sqft = 100.00 % Electrical generating efficiency \*\*\*\*\*\*\*\*\*\*\* 2. PLANT SELECTION Mult Plant Name Plant Name #2 OIL FIRED STM BOILER 1 3. FUEL & ELECTRIC RATE SELECTION \_\_\_\_\_\_\_ Fuel or Energy No. Name of Rate Schedule Currency Electric 10 GENERIC Natural Gas 5 NATURAL GAS (GENERIC) 4 DOMESTIC FUEL OIL #2 Fuel Oil 10 Empty... Propane MBTU Remote Source Heating 6 HEAVY FUR
Remote Source Cooling 10 Empty... 6 HEAVY FUEL OIL #6 MBTU

### MONTHLY ENERGY COSTS

Building : BUILDING #327 Site: FT. BELVOIR, VIRGINIA

02-05-91 6100190202

Prepared By : ENGG APPLICATIONS CONSUL

Farrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*

Page 1 of 1

TABLE 1. HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	Remote Cooling
Jan	137	0	610	0	0	0
Feb	125	0	527	0	0	0
Mar	143	0	513	0	0	0
Apr	148	0	454	0	0	0
May	167	0	429	0	0	0
June	192	0	382	0	0	0
July	228	0	383	0	0	0
Aug	220	0	383	0	0	0
Sept	178	0	412	0	0	0
Oct	156	0	461	0	0	0
Nov	141	0	495	0	0	0
Dec	139	0	575	0	0	0
Tot.	1,973	0	5,624	0	0	0

\*\*\*\*\*\*\*\*\*\*\*

TABLE 2. NON-HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	
Jan	70	0	16	0	0	
Feb	63	0	14	0	0	
Mar	73	0	16	0	0	
Apr	69	0	16	0	0	
May	72	0	16	0	0	
June	70	0	16	0	0	
July	70	0	16	0	0	
Aug	75	0	17	0	0	
Sept	64	0	14	0	0	
Oct	75	0	17	0	0	
Nov	69	0	16	0	0	
Dec	68	0	15	0	0	
Tot.	838	0	189	0	0	

# FUEL OIL COSTS

Building : BUILDING #327

Site: FT. BELVOIR, VIRGINIA

02-05-91 6100190202

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program Page 1 of 1

TABLE 1. MONTHLY COMPONENT CHARGES (MBTU)

Month	Energy Charges	Fixed Charges	Taxes	Total Charges
Jan	626	0	0	626
Feb	542	0	0	542
Mar	530	0	0	530
Apr	470	0	0	470
May	445	0	0	445
June	398	0	0	398
July	399	0	0	399
Aug	400	0	0	400
Sept	426	0	0	426
Oct	478	0	0	478
Nov	511	0	0	511
Dec	590	0	0	590
Tot.	5,812	0	0	5,812

TABLE 2. MONTHLY TOTALS

Month	Charges (MBTU)	Energy (Gallon)	Effective Rate (MBTU/Gallon)
Jan	626	4,511	0.13870
Feb ·	542	3,905	0.13870
Mar	530	3,819	0.13870
Apr	<b>4</b> 70	3,387	0.13870
May	445	3,210	0.13870
June	398	2,867	0.13870
July	399	2,874	0.13870
Aug	400	2,882	0.13870
Sept	426	3,075	0.13870
Oct	478	3,444	0.13870
Nov	511	3,682	0.13870
Dec	590	4,252	0.13870
Tot.	5,812	41,907	0.13870

THE EST, MAX, HTG. COIL LOAD (933, 14 MBH) IS WORST CLSE AND PROBABLY OCCURES DURING WINTER BUT ONLY REPRESENTS THE SYSTEMS SIMULATED,

" WE WILL NOT NEED AS LARGE A BOILER AS IS INDICKTED ON PLANT DESCRIPTION.

AND ADD ABOUT 20% AS A SAFETY FACTOR THE RESULTANT LOAD WILL BE SUFFICIENT TO SELECT A LOCAL STEAM BOILER TO ACCOMMODATE THE STEAM REQUIREMENT OF THE BUILDING, DURING THE SUMMER.

MONTHLY MBTU EXPENDED FOR SUMMER REHEAT AND DOMESTIC HOT WATER GENERATION AS SIMULATED BY CARRIER E-20 COMPUTER PROGRAM.

APR	470/2	E	235 MBTU	1910 GALS
MAY		=	445	3210
JUNE		=	398	2867
JULY		=	399	2874
AUG.		=	400	2882
SEPT.		=	426	3075
OCT.	478/2	<b>*</b>	239	1722
			2542 MBTU	18,540 GALS.

SELECT: PEERLESS SERIES 7FDA INDUSTRIAL/COMMERCIAL

(80\* NP)

CAST IRON BOILER-BURNER UNIT

MODEL 709 FDA SU , 33 BAP , 10" VENT , 9 SETIONS

OVERALL EFF W/ PIPING LOSSES & PICKUP = 61% (2) 4" TAPS

INPUT @ 9.6 GPH, # Z = 1331.5 MBH 50" x35 W x 60" h

CORRECTED NET OUTPUT = 816.3

SELECT: 3000 GAL OIL STORAGE TAUK (UNDERGROUND)

5'-4" & x 18' (5.2" TAPS) 2750 164 HIGHLAND 7 GA.

				DATE PREPARED		<del></del>	
CONSTRUCTION COST	ESTI	MATE	=	1	1991	SHEET	OF
PROJECT ENERGY SAVINGS	OPP	PTU	LIITY	SURVEY		R ESTIMATE	
COCATION					1 <b>-</b> -	CODE A (Ho designory	· · · · · · · · · · · · · · · · · · ·
FT. BELVOIR VIR	GINIA		old G	327	1	CODE C (Final da	
ENGINEERING APPL	ICATION	JS 6	CONSUL	TANTS		HER (Specify)	
DRAWING NO.  OIL FIRED MP STEAM BOILER			ATOR			CHECKED BY	
0/2 //2001/11 0/0/11 00/0/2	QUANT	ITY		LABOR	.	MATERIAL	
SUMMARY	NO. UNITS	UNIT MEAS.	PER UNIT	TOTAL	PER UNIT	TOTAL	COST
BOILER HOUSE ADDITION	144	SF	<i>2</i> 3,	3312	14.	2016	5328
	<u> </u>						
OIL FIRED MP STEAM BOILER	1	EA		2000		9830	11,830
3000 GAL OIL STOR. EQUIP.		LS		5000		10,743	15,743
MISC DIL HOOK-UP COSTS		LS		240		306	546
VENT CHIMNEY 10"\$	17	EA	7.30	124	58.30	991	1115,
FITTINGS, FIRSHING, TOP, Etc.		15		109		1687	1796.
AUTO DRAFT REGULATOR	1	EA		19		141	160.
STEAM APING, FITTINGS, VALVES, EL		15		2400		918	3318,
CONDENSATE PIPING TRAPS Etc.		15		649		898	1547.
RETURN FEEDWATER SUSTEM		LS		880		574	1454.
ELECTRICAL WORK, LIGHTS & FOWER	44	SF	3.70	535	5.50	792	1327,
						· · · · · · · · · · · · · · · · · · ·	
SUB-TOTAL				15, 268		28,896	44,164
LABOR MARKUP 21%				3206			3206
TAXES 4.5%						1300	1300
SUB-TOTAL							48,670
OVERHEAD 10%							4,867
SUB-TOTAL							53,537
PROFIT 10%	,						5,354
SUB-TOTAL							58,891
							#
TOTAL							\$ 58,891

# STEAM VALVES, PIPING, FITTINGS, VALVES Etc.

		L	M	<b>T</b>
4"	STM. VALVES OS 4 V	120	215	335
	BOILER DEAIN VALVE	5,80	11.90	17.70
4"	PIPING (40')	9.60	6.77 1.03	N.40
	PIPING ( )			
	PIPING ( )			
m 4"	WN/FLAUGE (4)	36.	14.80 <i>3.</i> 82	54.67
	90° ELL (10)	71	14.90 7.65	93.55
	TEE (2)	120	27 12,75	159.75
_ 4.	WELDING JOINT (20)	39.82		•
		2400	918	3318

## CONDENSATE PIPING, TRAPS

بتقاط ماطال والمرازي	<b></b>	<b></b>		
2" PIPING (40')				
203 (Z) TRAP ASSEMBLY				
MISC 10%				
	473	879	1352	
WELDING LABOR (8)				
	_			

### RETURN FEEDWATER

				<b>!.</b>
ħ	PIPING (50')	5.85	2,68 ,63	9.16
	VALVE	40	84	124.
	MISC FITTHES	25	30	55.
		358	280	638
	WELDING LABOR (10)	22	2.39	21.39
	CONTROL CHANGES	300-	270	570

880

	L	$\sim$	T .
(17) STR 10"\$	7.30	58.30	65.60
(2) 45° EU	14.60	195	209.60
90° TEE	16.70	214	230.70
PLT. SUPPORT	17.55	123	140.55
ROOF THIMBLE	17.55	310	327.55
ROOF SUP. ASSEM.	18.45	405	423.45
STACK CAP	8.75	245	253.75
	233,	2478	2911

## OIL HOOK-UP

4		L	M	T	
/	FILTER	9,90	9.95	19.95	
	-VALVE	8.25	4.25	12.50	
<b>~</b>	VALVE	16.50	8,60	25.00	
<b>/</b> _	2" VENT CAP	6.20	7.50	13.70	
<b>✓</b> .	TUBE (10')	2.53	1,28	3,81	
<b>/</b>	2" STL V.P. (20')	6.25	4.08,67	11.00	·
<b>\</b>	LOUVERS (2)	7,20	24.00	31.20	1,331,500/4000 = 330 00 10 x1.5. 491
<b>V</b>	DAMPERS (2)	17.76	58.30	76.	・
<b>V</b>	FILL CAP	6.20	7,50	13.70	
	e de la composición dela composición de la composición dela composición de la composición dela composición dela composición de la composic				

### OIL STORAGE

3000 GAL UNDERGROUD, STEEL, DOUBLE WALL, UL LISTED, REQD. STI-P3 CORROSION PROTECTION 30 YR WARRANTEE 5580 TANK 380 5200 HOLD DUS. 63 450 313 (40) 12 PIPING (26') 4.18 1.69 45 6.32 9.20 FOOT VALUE 9,90 31.25 41.15 454 PUMP (2) 395 TANK GAGE SYS 79 715 794 7.75 VALVES (2) 8.25 16,00 SHUT OFF (4 ) 19.80 31.55 11.75 PAD(B)CY 25. 94.00 119 (60) EXCAVATION & 46 8413 13,413 5000 LEAK DETECTION SYS 2 PROBES 725 MASTER W/ALARM 650 SOIL PROPE 650 TANK PROBE IF CABLE (30) ,6B 20 285 TEST KIT 2330 10,743

5000

15,743

BUILDING 331

#### DESIGN PARAMETERS, SHGs

Location: FT. BELVOIR, VIRGINIA
Prepared By: ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program Page 1 of 1

02-04-91

6100190202

#### DESIGN WEATHER PARAMETERS

TABLE 1. MAXIMUM SOLAR HEAT GAINS - AVERAGE DAYS (BTU/hr/sqft)

Month	NE	E	SE	s	sw	W	MM	N	Hor
Jan	24.2	61.1	97.3	110.1	97.3	61.1	24.2	24.2	80.0
Feb	31.8	74.8	105.7	113.8	105.7	74.8	31.8	31.8	107.2
Mar	40.8	87.0	106.9	108.0	106.9	87.0	40.8	40.8	136.8
Apr	60.0	97.4	104.4	97.2	104.4	97.4	60.0	49.3	164.3
May	74.9	103.0	98.4	84.0	98.4	103.0	74.9	54.9	181.8
Jun	85.1	109.3	97.5	79.2	97.5	109.3	85.1	57.9	195.2
Jul	80.6	106.7	98.1	81.4	98.1	106.7	80.6	56.4	189.3
Aug	69.1	104.1	105.7	94.4	105.7	104.1	69.1	52.2	177.6
Sep	52.3	99.3	114.8	111.6	114.8	99.3	52.3	45.4	158.1
Oct	36.4	88.3	117.7	122.9	117.7	88.3	36.4	36.4	128.2
Nov	26.7	66.5	101.8	113.3	101.8	66.5	26.7	26.7	89.4
Dec	21.4	53.0	87.6	100.9	87.6	53.0	21.4	21.4	68.4

TABLE 2. MAXIMUM SOLAR HEAT GAINS - DESIGN DAYS
(BTU/hr/sqft)

Month	NE	E	SE	s	sw	W	NW	N	Hor
Jan	20.4	158.9	243.9	253.8	243.9	158.9	20.4	20.4	142.0
Feb	53.0	189.1	246.5	237.5	246.5	189.1	53.0	24.7	187.7
Mar	95.9	219.8	234.5	200.7	234.5	219.8	95.9	29.4	229.0
Apr	141.6	224.4	200.1	146.7	200.1	224.4	141.6	34.1	256.0
May	166.1	220.1	170.7	104.6	170.7	220.1	166.1	37.4	268.0
Jun	173.2	215.4	156.7	87.8	156.7	215.4	173.2	47.4	269.7
Jul	163.7	215.7	166.5	101.4	166.5	215.7	163.7	38.3	264.7
Aug	136.4	216.6	193.1	141.7	193.1	216.6	136.4	35.8	251.3
Sep	90.3	207.2	224.7	194.9	224.7	207.2	90.3	30.6	221.4
Oct	52.0	182.7	238.2	230.6	238.2	182.7	52.0	25.5	184.4
Nov	20.7	156.1	239.8	249.9	239.8	156.1	20.7	20.7	141.3
Dec	18.5	141.9	236.4	254.2	236.4	141.9	18.5	18.5	122.2

Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program

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MASTER SCHEDU	LE 1	. occ	UPANC	Y			Hou	rly P	ercen	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	0	0	0	0	0	10	50	100	100	100	100
Saturday	0	0	0	0	0	0	5	5	5	10	10	10
Sunday	0	0	0	0	0	0	0	5	5	5	5	!
DESIGN	0	0	0	0	0	10	20	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	80	50	10	10	5	5	0	(
Saturday	10	10	10	5	5	5	5	5	0	0	0	(
Sunday	5	5	5	5	5	5	0	0	0	0	0	(
DESIGN	100	100	100	100	100	100	100	20	10	0	0	( 
**************************************			***** HTING	****	****	****		**** rly P			****	***
Hour>	0	1	2	   3	4	5	6	7	8	9	10	1:
Weekday	   5	5	   5	5	   5	5	20	80	100	100	100	100
Saturday	5	5	5	5	5	5	15	15	20	40	50	50
Sunday	5	5	5	5	5	5	5	15	20	30	30	30
DESIGN	10	10	10	10	10	20	50	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday.	100	100	100	100	90	70	40	30	20	20	5	5
Saturday	50	50	50	50	50	40	30	20	5	5	5	!
Sunday	30	30	30	20	20	20	20	5	5	5	5	
DESIGN	100	100	100	100	100	100	100	50	20	10	10	10
**************************************			***** IPMEN'		****	****		**** rly P			****	***
Hour>	O		2		   4	   5	6	   7	8	   9	10	11
		<u>-</u>	·				<u>-</u>		· 	<u>-</u>		<u>-</u>
Weekday	5		5	1				1 .				
Saturday	5	5	5	5	5	5	10	10	15	20	20	20
Sunday	5	5	5	5	5	5	5	10	10	10	10	20
DESIGN	10	10	10	10	10	20	40	100	100	100 	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	80	50	20	10	5	5	5	5
Saturday	20	20	20	10	10	10	10	10	5	5	5	5
Sunday	20	15	15	10	10	10	10	5	5	5	5	5
DESIGN	100	100	100	100	100	100	100	40	20	10	10	1 10

MASTER SCHEDULE SUMMARY

Page 2 02-04-91 Prepared By : ENGG APPLICATIONS CONSUL 6100190202 Carrier Hourly Analysis Program

MASTER SCHEDU	LE 4.	. DOM	ESTIC	HOT	WATER		Hou	rly Po	ercen	cages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
 Weekday	0	0	0	0	0	5	10	10	20	20	20	80
Saturday	0	0	0	0	0	2	2	2	5	5	5	5
Sunday	0	0	0	0	0	0	0	2	2	2	2	2
DESIGN	0	0	0	0	0	5	5	20	20	20	20	80
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
 Weekday	80	20	20	20	10	10	5	5	5	2	0	0
Saturday	5	5	5	2	2	2	2	2	0	0	0	0
Sunday	2	2	2	2	2	2	0	0	0	0	0	0
DESIGN	80	20	20	20	10	10	5	5	2	2	0	0

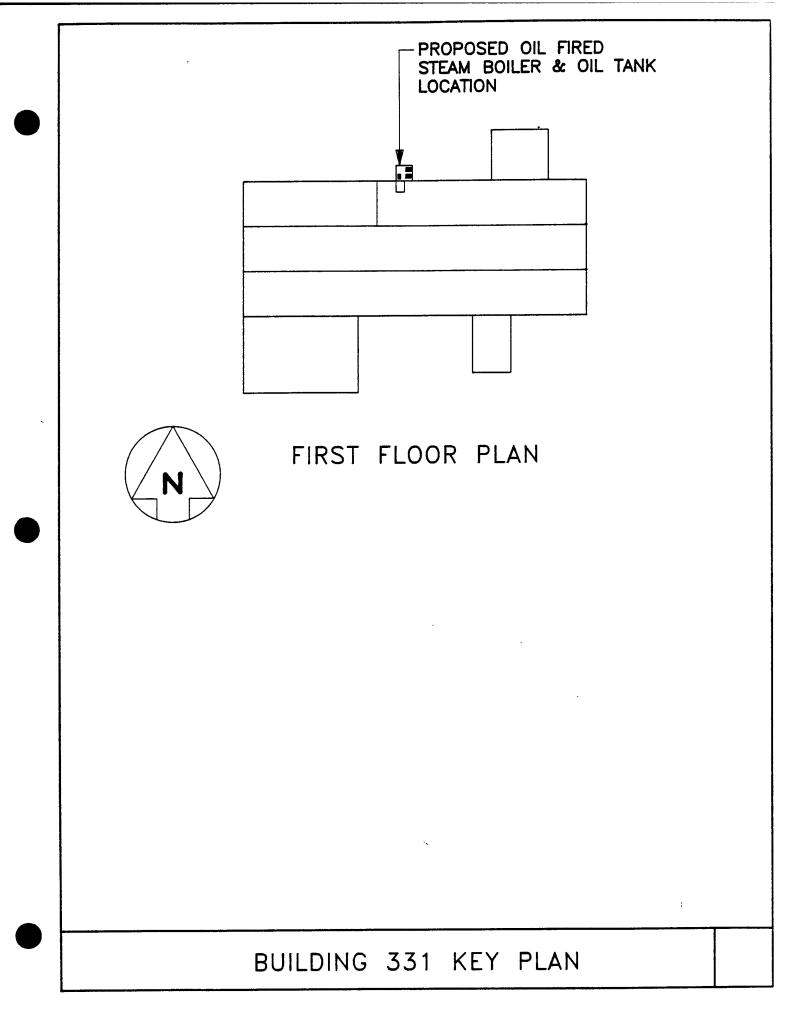
DAY TYPE DATA

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program 6100190202

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Month	DAY TYPE 1 Weekday	DAY TYPE 2 Saturday	DAY TYPE 3 Sunday	Total Days/Month
January	21	4	6	31
February	19	4	5	28
March	22	5	4	31
April	21	4	5	30
May	22	4	5	31
June	21	5	4	30
July	21	4	6	31
August	23	4	4	31
September	19	5	6	30
October	23	4	4	31
November	21	4	5	30
December	20	5	6	31



#### BUILDING DESCRIPTION

Remote Source Heating 6 HEAVY FURNING Remote Source Cooling 9 Empty...

02-04-91 Building: BUILDING 331 (#2 OIL) 6100190202 Prepared By: ENGG APPLICATIONS CONSUL Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\* 1. BUILDING INPUTS BUILDING NAME = BUILDING 331 (#2 OIL) MISCELLANEOUS ELECTRIC 0.0 kW Maximum power , 1 Power schedule DOMESTIC WATER HEATING Is a domestic how water system used ? = 100.0 gal Maximum hourly hot water use == Hot water schedule 65.0 F Average entering water temperature = Average entering water temperature = Average hot water supply temperature = 140.0 F = 2 : Combustion Heating plant type = 2 : Fuel Oil Fuel type = 1135.0 MBH Plant capacity ? Is plant efficiency computer generated N Annual plant efficiency 63 % OTHER INPUTS 0.0 sqft Additional building floor area = = 100.00 % Electrical generating efficiency \*\*\*\*\*\*\*\*\*\*\*\* 2. PLANT SELECTION Mult Plant Name Plant Name \_\_\_\_\_ #2 Oil Fired Boiler 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 3. FUEL & ELECTRIC RATE SELECTION No. Name of Rate Schedule Currency Fuel or Energy \_\_\_\_\_\_ 10 ELECTRIC RATE (GENERIC)
5 NATURAL GAS (GENERIC) Electric MBTU Natural Gas 4 DOMESTIC FUEL OIL #2 (GENERIC) Fuel Oil 9 Empty... Propane

6 HEAVY FUEL OIL #6 (GENERIC)

\_\_\_\_\_\_

MBTU

#### FUEL OIL COSTS

Building : BUILDING 331 (#2 OIL)

Site : FT. BELVOIR, VIRGINIA

02-04-91 6100190202

Prepared By : ENGG APPLICATIONS CONSUL

arrier Hourly Analysis Program

Page 1 of 1

TABLE 1. MONTHLY COMPONENT CHARGES (MBTU)

Month	Energy Charges	Fixed Charges	Taxes	Total Charges
Jan	8	0	0	8
Feb	7	0	0	7
Mar	8	0	0	8
Apr	8	0	0	8
May	8	0	0	8
June	8	0	0	8
July	8	0	0	8
Aug	8	0	0	8
Sept	7	0	0	7
Oct	8	0	0	8
Nov	8	0	0	8
Dec	7	0	0	7
Tot.	91	0	0	91

TABLE 2. MONTHLY TOTALS

Month	Charges (MBTU)	Energy (gallon)	Effective Rate (MBTU/gallon)
Jan	8	55	0.13870
Feb	7	50	0.13870
Mar	8	57	0.13870
Apr	8	55	0.13870
May	8	57	0.13870
June	8	55	0.13870
July	8	55	0.13870
Aug	8	59	0.13870
Sept	7	50	0.13870
Oct	8	59	0.13870
Nov	8	55	0.13870
Dec	7	53	0.13870
Tot.	91	658	0.13870

TOTAL MBTU ESTIMATED FOR HEATING AND AIR CONDITIONING LABORATORY

IF LAB USES 100% OF EQUIPMENT CAPACITY FOR 40% OF THE NORMINAL OPERATING HOURS (10 HRS) PER DAY

100% LOAD = 1014 MBH & OVERALL SYSTEM EFFICIENCY = 62.4% THEN INPUT ENERGY REQUIRED = 1014/62.4 × 100 = 1625 MBH

	WORKDAYS	HRS	( 11.71 GPH)		MBTU	GALS
APR	11	44	× 1625 MBH	=	71.5	516
YAM	27	88			143.	1031
JUNE	21	84			136.5	984
JULY	21	84			136.5	984
AUG	23	92			149.5	1078
SEPT	19	76			123,5	891
OCT	12	48	naroun		78.	563
	129	516			838.5	6047

516 HRS. X 1625 MBH = 838.5 METU

SELECT: 1100 GAL OIL STORAGE
USE (2) 550 GAL TANKS IN BOILER HOUSE ADMITTION

### TOTAL MBTU ESTIMATED FOR DOMESTIC HOT WATER

100	1	00 (1)
APR	= 4 MBTU	28 GAL
MAY	= 8	57
JUNE	= 8	95
JULY	= 8	55
AUG	= 8	59
SEPT	- 7	50
$\alpha$ T	= 4	30
	47 MBTU	334 GAL
	(46,325.8 MBH)	

TOTAL SUMMER LOAD FOR BLDG #331 FROM DISTRIBUTION STS.

HEATING & AIR CONDITIONING LAB LOAD = 1014

DOMESTIC HOT WATER LOAD = 36

1050

GROSS ENERGY REQD. W/PIPING LOSSES \$ PICKUP LOADS = 1050/62.5 × 100 =

1625 MEH

MUST BE AVAILABLE HEATING AND AIR CONDITIONING LABORATORY

BOILER SIZING (WORST CASE = FULL LOAD)

HUMIDIFIERS = 150165/HR MAX. SAY 174 MEH

HTG. H.W. CONV. =

MLX.

840 MEH

1014

DOM HW WORST CASE =

1050 HBH

36 MBH

SELECT: PEERLESS SERIES 7FDA INDUSTRIAL/COMMERCIAL

CAST IRON BOILER - BURNER UNIT # 712 FDA SU

W/GROSS IBR OUTPUT OF 1488 MBH

NET = 1135 MBH W/OVERALL EFF. OF 62.4% INCLUDING

ALLOWANCE FOR PIPING 1055 \$ PICKUP LOAD

12"VEUT, 13 GPH INPUT, 45 BHP

66"L x 35"W x 60"h, (2) 4" SUPPLY, (0) 3" RET.

CONSTRUCTION COST	ESTU	MATE	-	DATE PREPARED	1001			
CONSTRUCTION COST	E3111	NAIL		FEB	1991 SHEET OF			
ENERGY SAVINGS	OPPC	RTU	UITY "	SURVEY	CODE A (No design completed)			
FT. BELVOIR VIR	GINIA	•	BLDG	331 .1	c	DE D (Preliminary de CODE C (Final desi	asign)	
ARCHITECT ENGINEER  FLIGILIEEPING APPL	LICATIONS CONSULTANTS					HER (Specify)		
DRAWING NO. OIL FIRED LP STEAM BOILE		ESTIM				CHECKED BY		
	THAUD	ITY		LABOR		MATERIAL		
SUMMARY	NO. Units	UNIT MEAS.	PER	TOTAL	PER UNIT	TOTAL	COST	
BOILER HOUSE ADDITION	272	5F	23.	6256	14.	3808	10,064	
OIL FIRED LP STEAM BOILER	1	EA		2450		10,910	13,360	
550 GAL OIL STOR, TANK	2	EA	89	178	1050	2100	2,278,	
OIL LINE, VALUES, HOOK UP	1	LS		<b>35</b> 5		329	634.	
VENT CHIMNEY 12'4	18	LF	7.95	143	66.60	1199 1	1342,	
FITTINGS, FLASHING, TOP	1.	LS		119		1905	2024.	
AUTO DRAFT REGULATOR		EA		19		157	176.	
STEAM PIPING, FITTINGS, VALVES EL		15		2220		1250	3470.	
CONDENSATE PIPING TRAPS ETC		LS		896		1124	2020.	
ELECTRICAL WORK LIGHTS/POWER		15		1000		1500	2500.	
SUB-TOTAL				13,636		24,287	37,918	
LABOR MARKUP 21%				2864			2864	
TAXES 45%						1093	1093	
SUB-TOTAL							41875	
OVERHEAD 10%							4 188	
SUB-TOTAL							46063	
PROFIT 10%							4606	
SUB-TOTAL							50,669	
TOTAL							50,670	

ALL FUEL CHIMNEY, UL L	ISTED, DOUBLE WALL	, 304 INNER - STL OUTER
------------------------	--------------------	-------------------------

•	L	M	T				
(1B') STR 12"\$	7.95	66.60	74.55			•	
(2) 45° EU	15.95	220	23595	•			
90° TEE	17.55	251	268.55				·
PLT. SUPPORT	19.50	129	148.50				•
ROOF THIMBLE	19.50	<i>3</i> 25	344,50				
ROOF SUP. ASSEM.	21.	475	496.			. •	
STACK CAP	9.25	285	294,25				
	_	<del></del>			•	•	÷
	118,70.			•		•	
	119	1905	2024				

## OIL HOOK-UP

	L	M	T	•
FILTER	9.90	9.95	19.95	
VALVE	8.25	4.25	12.50	
VALVE	16.50	8,60	25.00	
2" VENT CAP	6.20	7.50	13.70	
TUBE (35')	2.53	1.28	3.81	
2" STL V.P. (25')	6.25	4.08.67	11.00	and the second of the second o
LOUVERS (2)	7.20	24.00	31.20	
DAMPERS (7)	24.00	48.00	72.00	·
FILL CAP	6.20	7,50	13.70	
	<b>35</b> 5	329	684	
32 4" STEAM VALVES	120	215	335	BOILER FEED RETURN
3" (15') PIPING 4" (50') PIPING 41 2"8 (50') " 110 4" (2) WN/FLINGE	5,80 8.25 9.60 6.25 <b>3</b> 6.	11.90 4.69 .81 6.77 1.83 2.30 .67 14.80 3.82	17.70 13.83 17.40 10.22 54.62	83 SAY 2" (66) 5.85 2,68 63 9,16
105 (10) 90°EU	71	14.90 7.65	93.55	
106 4 (4) TEE	120	27 12.75	159.75	
3" (3) WN/FLANGE	25	H.10 2.73	41.83	
3" (6) 90°EL	51	9 545	45A5	
203 (Z) TRAP KG EL	90	320	1-13	+ 10% IN COND RET

**BUILDING 334** 

#### DESIGN PARAMETERS, SHGs

Location : FT. BELVOIR, VIRGINIA

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program Page 1 of 1

11-23-90

6100190202

#### DESIGN WEATHER PARAMETERS

TABLE 1. MAXIMUM SOLAR HEAT GAINS - AVERAGE DAYS (BTU/hr/sqft)

Month	NE	E	SE	s	SW	W	NW	N	Hor
Jan	24.2	61.1	97.3	110.1	97.3	61.1	24.2	24.2	80.0
Feb	31.8	74.8	105.7	113.8	105.7	74.8	31.8	31.8	107.2
Mar	40.8	87.0	106.9	108.0	106.9	87.0	40.8	40.8	136.8
Apr	60.0	97.4	104.4	97.2	104.4	97.4	60.0	49.3	164.3
May	74.9	103.0	98.4	84.0	98.4	103.0	74.9	54.9	181.8
Jun	85.1	109.3	97.5	79.2	97.5	109.3	85.1	57.9	195.2
Jul	80.6	106.7	98.1	81.4	98.1	106.7	80.6	56.4	189.3
Aug ·	69.1	104.1	105.7	94.4	105.7	104.1	69.1	52.2	177.6
Sep	52.3	99.3	114.8	111.6	114.8	99.3	52.3	45.4	158.1
Oct	36.4	88.3	117.7	122.9	117.7	88.3	36.4	36.4	128.2
Nov	26.7	66.5	101.8	113.3	101.8	66.5	26.7	26.7	89.4
Dec	21.4	53.0	87.6	100.9	87.6	53.0	21.4	21.4	68.4

TABLE 2. MAXIMUM SOLAR HEAT GAINS - DESIGN DAYS (BTU/hr/sqft)

			-						
Month	NE	E	SE	s	SW	W	NW	N	Hor
Jan	20.4	158.9	243.9	253.8	243.9	158.9	20.4	20.4	142.0
Feb	53.0	189.1	246.5	237.5	246.5	189.1	53.0	24.7	187.7
Mar	95.9	219.8	234.5	200.7	234.5	219.8	95.9	29.4	229.0
Apr	141.6	224.4	200.1	146.7	200.1	224.4	141.6	34.1	256.0
May	166.1	220.1	170.7	104.6	170.7	220.1	166.1	37.4	268.0
Jun	173.2	215.4	156.7	87.8	156.7	215.4	173.2	47.4	269.7
Jul	163.7	215.7	166.5	101.4	166.5	215.7	163.7	38.3	264.7
Aug	136.4	216.6	193.1	141.7	193.1	216.6	136.4	35.8	251.3
Sep	90.3	207.2	224.7	194.9	224.7	207.2	90.3	30.6	221.4
Oct	52.0	182.7	238.2	230.6	238.2	182.7	52.0	25.5	184.4
Nov	20.7	156.1	239.8	249.9	239.8	156.1	20.7	20.7	141.3
Dec	18.5	141.9	236.4	254.2	236.4	141.9	18.5	18.5	122.2
, .									

### MASTER SCHEDULE SUMMARY

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program

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ASTER SCHEDU	LE 1	. occ	UPANC		Hourly Percentages							
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	0	0	0	0	0	10	50	100	100	100	100
Saturday	0	0	0	0	0	0	5	5	5	10	10	10
Sunday	0	0	0	0	0	0	0	5	5	5	5	:
DESIGN	0	0	O	0	0	10	20	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	80	50	10	10	5.	5	0	0
Saturday	10	10	10	5	5	5	5	5	0	0	0	
Sunday	5	5	5	5	5	5	0	0	0	0	0	
DESIGN	100	100	100	100	100	100	100	20	10	0	0	0
**************************************											***	
Hour>	<u>,</u> 0	1 	2	3	4	5 	6	7	8	9	10	11
Weekday	5	5	5	5	5	5	20	80	100	100	100	100
Saturday	5	5	5	5	5	5	15	15	20	40	50	50
Sunday	5	5	5	5	5	5	5	15	20	30	30	30
DESIGN	10	10	10	10	10	20	50	100	100	100	100	100
dour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	90	70	40	30	20	20	5	5
Saturday	50	50	50	50	50	40	30	20	5	5	5	5
Sunday	30	30	30	20	20	20	20	5	5	5	5	5
DESIGN	100 	100	100 	100	100	100	100	50 	20	10	10	10
**************************************	***** LE 3	***** • EOU	***** IPMEN'	**** T	****	****				**** tages	****	***
Uour												
Hour>	0	1	2	3	4	5 	6	7 	8 	9	10	11
Weekday	5	5	1			1	1			100	100	100
Saturday	5	5	5	5	5	5	10	10	15	20	20	20
Sunday	5	5	5	5	5	5	5	10	10	10	10	20
DESIGN	10	10	10 	10	10	20	40	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	80	50	20	10	5	5	5	5
Saturday	20	20	20	10	10	10	10	10	5	5	5	5
Sunday	20	15	15	10	10	10	10	5	5	5	5	5
DESIGN	100	100	100	100	100	100	100	40	20	10	10	10
*****	**************											

MASTER	SCHEDULE	SUMMARY
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Prepared	Ву	:	ENGG	APPL	CATIONS	CONSUL	
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Carrier	Hourly	Analysis	Program
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6	1	0	0	1	9	0	2	0	2	
_	_	_	_	_	_	_	_	_	_	

MASTER SCHEDU	LE 4.	DOM	ESTIC	HOT	WATER		Hou	rly Pe	ercen	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
 Weekday	0	0	o	0	0	5	10	10	20	20	20	80
Saturday	0	0	0	0	0	2	2	2	5	5	5	5
Sunday	0	0	0	0	0	0	0	2	2	2	2	2
DESIGN	0	0	0	0	0	5	5	20	20	20	20	80
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
 Weekday	80	20	20	20	10	10	5	5	5	2	0	0
Saturday	5	5	5	2	2	2	2	2	0	0	0	0
Sunday	2	2	2	2	2	2	0	0	0	0	0	0
DESIGN	80	20	20	20	10	10	5	5	2	2	0	0

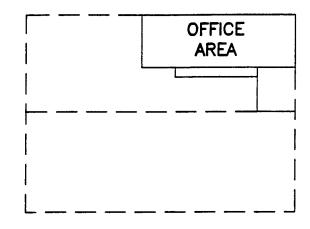
DAY TYPE DATA

Prepared By : ENGG APPLICATIONS CONSUL

| Carrier Hourly Analysis Program | 6100190202

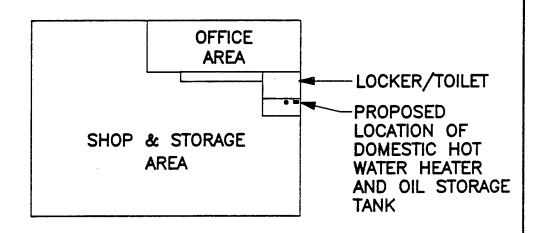
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L				
Month	DAY TYPE 1 Weekday	DAY TYPE 2 Saturday	DAY TYPE 3 Sunday	Total Days/Month
January	21	4	6	31
February	19	4	5	28
March	22	5	4	31
April	21	4	5	30
May	22	4	5	31
June	21	5	4	30
<b>July</b>	21	4	6	31
August	23	4	4	31
September	19	5	6	30
October	23	4	4	31
November	21	4	5	30
December	20	5	6	31





## MEZZANINE FLOOR PLAN



FIRST FLOOR PLAN

## BUILDING 334 KEY PLAN

BUILDING Building : BUILDING 334 ( Prepared By: ENGG APPLICA Carrier Hourly Analysis P	#2 OIL) TIONS CO	M NSUL	****	***	****	****	6100 Page		02
1. BUILDING INPUTS					n n	224	/#2 C	\TT \	w
BUILDING NAME				=	BUILDING	334	(#2 C	,11)	M
MISCELLANEOUS ELECTRIC									
Maximum power				=	0.0	kW			
Power schedule				=	1				
DOMESTIC WATER HEATING									
Is a domestic how water		?	Y						
Maximum hourly hot wate		=	90.0	gal					
Hot water schedule		=	4						
Average entering water		65.0							
Average hot water suppl		140.0							
Heating plant type			2 : Comba		on				
Fuel type					230.5				
Plant capacity Is plant efficiency com	nuter de	nerat	·ed	?					
Annual plant efficiency	pacer ge			=	65				
•									
OTHER INPUTS									
Additional building flo	or area			=	0.0		t		
Electrical generating e	fficienc	, У		=	100.00	_			
2. PLANT SELECTION	*****	****							
2. PLANT SELECTION									
Plant Name	Mult	1	Plant	Nam	e 		A	Mult	
#2 Oil Fired Boiler	1	1							
******	*****	****	*****	***	*****	***	*****	***	**
3. FUEL & ELECTRIC RATE S	ELECTION								
Fuel or Energy	No. N	ame c	of Rate	Sch	edule		Cu	ırren	cy
Electric	10 E	LECTE	RIC RATE		ENERIC)			MBT	טי
Natural Gas	10 ELECTRIC RATE (GENERIC) 5 NATURAL GAS (GENERIC)							MBT	
Fuel Oil	4 DOMESTIC FUEL OIL #2 (GENERIC)							MBT	ט'.
Propane	9 Empty							MBT	טי
Remote Source Heating	eating 6 HEAVY FUEL OIL #6 (GENERIC)								

Empty...

Remote Source Cooling

### MONTHLY ENERGY COSTS

Building: BUILDING 334 (#2 OIL) M

11-07-90 6022890201

Site: FT. BELVOIR, VIRGINIA repared By : ENGG APPLICATIONS

Page 1 of 1 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TABLE 1. HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	Remote Cooling
Jan	0	0	0	0	0	0
Feb	0	0	0	0	0	0
Mar	0	0	0	0	0	0
Apr	0	0	0	0	0	0
May	0	0	0	0	0	0
June	0	0	0	0	0	0
July	0	0	0	0	0	0
Aug	0	0	0	0	0	0
Sept	0	0	0	0	0	0
oct	0	0	0	0	0	0
Nov	0	0	0	0	0	0
Dec	0	0	0	0	0	0
Tot.	0	0	0	0	0	0

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TABLE 2. NON-HVAC COSTS (MBTU)

onth	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	
Jan	0	0	7	0	0	
Feb	0	0	6	0	0	
Mar	0	0	7	0	0	
Apr	0	0	7	0	0	
May	0	0	7	0	0	
June	0	0	7	0	0	
July	0	0	7	0	0	
Aug	0	0	7	0	0	
Sept	0	0	6	0	0	
Oct	0	0	7	0	0	
Nov	0	0	7	0	0	
Dec	0	0	6	0	0	
Tot.	0	0	80	0	0	

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### FUEL OIL COSTS

Building: BUILDING 334 (#2 OIL) M

Site : FT. BELVOIR, VIRGINIA

11-07-90 6022890201

repared By : ENGG APPLICATIONS

Parrier Hourly Analysis Program Page 1 of 1

TABLE 1. MONTHLY COMPONENT CHARGES (MBTU)

Month	Energy Charges	Fixed Charges	Taxes	Total Charges
Jan	7	0	0	7
Feb	6	0	0	6
Mar	7	0	0	7
Apr	7	0	0	7
May	7	0	0	7
June	7	0	0	7
July	7	0	0	7`
Aug	7	0	0	7
Sept	6	0	0	6
0ct	7	0	0	7
Nov	7	0	0	7
Dec	6	0	0	6
Tot.	80	0	0	80

TABLE 2. MONTHLY TOTALS

Month	Charges (MBTU)	Energy (gallon)	Effective Rate (MBTU/gallon)
Jan	7	48	0.13870
Feb	6	43	0.13870
Mar	7	50	0.13870
Apr	7	48	0.13870
May	7	50	0.13870
June	7	48	0.13870
July	7	48	0.13870
Aug	7	52	0.13870
Sept	6	44	0.13870
Oct	7	52	0.13870
Nov	7	48	0.13870
Dec	6	46	0.13870
Tot.	80	574	0.13870

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

```
OCCUPANCY $ 28 P
      FIRST FLOOR
                                           3/4
                                     FU
          LARGE TOILET
                                    ToT
                                           HW
              4 URINALS
              3 TOILETS
USE 7 TIME
              2 SHOWERS
PER HOUR
                LAVS
                                           1.5
          WOMEN'S TOILET
                                            75
          MEZZ. TOILET (DIDN'T SEE, COL, SAID TO LEAVE)
               ASSUME
                 1 TOILET
                                            .75
```

- 2 SHOWERS IN OPERATION FOR 30 MIN AT MAK GPM = 90 GPH OF HW
SAY MAX HW USAGE = 100 GPH ACTUAL USE BASE ON OBSERVATION IS MORE
LIKE 23 GPH ABSOLUTE MAX. (1.5 × 3 MINUTES X 5 TIMES / HR.)
HOWEVER DUE TO THE SIZE OF FACILITY AND POSSIBILITY OF MORE PERSONNEL
BEING ADDED WE WILL SELECT A 70 GAL HW NEATER - OIL FIRED FOR SUMMER USE.

OIL FIRED DOMEGTIC HOT WATER HEATER

SELECT: BOCK WATER HEATERS, INC.

MODEL 71E, 70 GAL STORAGE, 157 GPH@ 100°F RISE

1.25 GPH #2 , 120 V GHZ , 1/2" , VB HP , 2 "FBERGLASS INS.

494 163, 3 YR LIMITED WARRANTY, GLASS LINED, TURBOFWE DESIGN

MAGNESIUM ANODES, ASHRAE 90A INPUT = 173 MBH

COST QUOTE: RE. MICHEL CO., INC., E. VIENNA, 698-6244, \$875

OIL STORAGE TANK

SELECT: 275 GAL STD. INDOOR TANK

APR	= 3,5 MBTU	24 GALS
MAY	= 7	50
JUNE	= 7	48
JULY	= 7	48
AUG	= 7	52
SEPT	= 6	44
OCT	= 3.5	26
	41 METO	270 GALS

7,000,000 / 30 DAYS = 233.33 MBH / 24 HRS = 9.8 MBH

9.8 X 2 = 19.6 MBH W/LOSSES SAY 20 MEH

SAY ALL ENERGY EXPENDED WITH IN 10 HR WORK DAY = 23,4 LIEN DOUBLE IT FOR PIPIUGI LOSSES & SAFETY FACTOR = 47 LIEN

WORST CASE MAX. BASED ON SELECTED UNIT INPUT MBH

= 173 MEH

CONSTRUCTION COST	DATE PREPARED FEB	1991	SHEET	GF					
PROJECT ENERGY SAVINGS	OPPO	RTU	NITY '	SURVEY		R ESTIMATE			
LOCATION				4	CODE A (No design completed)  CODE D (Preliminary dasign)				
FT. BELVOIR VIE					] =	CODE C (Final des	elga)		
ENGINEERING APPL	ICATION	<b>15</b> 6	-0N5U!	LTANTS	L 61	HER (Specify)			
DIL FIRED DOM. H.W. HEATE	R	ESTIM	ATOR (	GEF	•	CHECKED BY			
	QUANT			LABOR		MATERIAL	TOTAL		
SUMMARY	NO. Units	UNIT MEAS.	PER	TOTAL	PER .	TOTAL	cost		
OIL FIRED HW HEATER		EA		275.		875.	1150.		
275 GAL DOM OIL STORAGE TANK		EA		71.		225.	296,		
OIL LINE & HOOK-UP	1	15		152.		103,	255,		
VENT & CHIMUEY	20	止	5,85	117.	3.96	79,	196,		
FITTINGS & FLASHIUG	1	LS		80.		73,	153.		
AUTO VENT DAMPER	1	EA		16.		137.	153.		
COMBUSTION AIR VENTS	2	EA	4.55	9.10	8.45	16.90	26.		
MANUAL DAMPEES	2	EA	9.30	18.60	8.20	16.40	35.		
ELECTRICAL WORK		15		180		325	505.		
MISCELLANEOUS 10%	1	LS		75.		150.	225,		
SUB-TOTAL				994		2000	2994		
LABOR MARKUP 21%				209			209		
TAXES 4.5%						90.	90		
SUB-TOTAL							3293.		
OVERHEAD 10%							329.		
SUB-TOTAL							3627.		
PROFIT 10%							362		
SUB-TOTAL							3984.		
TOTAL							£ 4000,		
					·				

CONSTRUCTION COST	ESTI	MATE	-	DATE PREPARED AUG	1991		SHEET	0 <i>F</i>
PROJECT ENERGY SAVINGS	DED.	PTO			BASIS F	OR ESTIM	ATE	
LOCATION					CODE A (No design completed)  CODE D (Preliminary design)  CODE C (Final design)  OTHER (Specify)			
FT. BELVOIR , VIR			-					
ENGINEERING APPL	ICATION	JS 2	-ONSU	LTANTS	۰ نــا	CHECKED		
DOM. HW HEATER REPLACEMENT ESTIMATOR REF					•	CHECKE	VP	
	THAUD	ITY		LABOR		MATERIAI I		TOTAL
SUMMARY	NO. Units	UNIT MEAS.	PER UNIT	TOTAL	PER UNIT	TO	TAL	COST
			·					
OIL FIRED HW HEATER	1	EA		275.		8	75.	1150.
COUNECTIONS: PIPING	1	15		60.			25,	85.
ELECTRICAL	1	LS		40.			10,	50.
·	·							
						,		<u> </u>
				1			-	
SUB-TOTAL				375.		9	10	1285,
							<del></del>	
				1				1
				70			<del></del>	70
LABOR MARKUP 21%				79			<u> </u>	79
TAXES 4.5%		<u> </u>				- 4	41	1 41
SUB-TOTAL		! 						141
OVERHEAD 10%								1546
SUB-TOTAL		<u>                                     </u>						1546
PROFIT 10%		<u>                                     </u>						1701
SUB-TOTAL								, , , , ,
TOTAL		<u>                                      </u>			-			<i>\$</i> 1700.
TOTAL		<del>                                     </del>						
		<u> </u>		; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;				
		<del>                                     </del>						
		<del>                                     </del>						

**BUILDING 357** 

#### DESIGN PARAMETERS, SHGs

Location : FORT BELVOIR, VIRGINIA
Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program Page 1 of 1

10-24-90

6022890201

#### DESIGN WEATHER PARAMETERS

TABLE 1. MAXIMUM SOLAR HEAT GAINS - AVERAGE DAYS
(BTU/hr/sqft)

Month	NE	E	SE	s	sw	W	NW	N	Hor
Jan	18.8	36.2	59.9	68.5	59.9	36.2	18.8	18.8	53.9
Feb	25.7	46.8	67.6	74.7	67.6	46.8	25.7	25.7	74.9
Mar	36.0	64.4	80.5	83.2	80.5	64.4	36.0	36.0	107.8
Apr	53.2	86.3	93.6	88.6	93.6	86.3	53.2	47.1	148.6
May	67.2	92.8	90.1	78.8	90.1	92.8	67.2	52.9	166.3
Jun	78.1	100.7	91.5	76.0	91.5	100.7	78.1	56.4	181.9
Jul	77.1	102.4	95.1	79.9	95.1	102.4	77.1	55.6	182.6
Aug	. 63.0	95.0	97.7	88.6	97.7	95.0	63.0	50.5	164.5
Sep	44.1	83.2	97.4	96.3	97.4	83.2	44.1	42.5	137.0
Oct	31.8	63.2	85.6	91.3	85.6	63.2	31.8	31.8	98.9
Nov	19.5	34.8	55.6	62.9	55.6	34.8	19.5	19.5	54.7
Dec	14.9	27.2	46.9	54.1	46.9	27.2	14.9	14.9	40.7

TABLE 2. MAXIMUM SOLAR HEAT GAINS - DESIGN DAYS (BTU/hr/sqft)

Month	NE	E	SE	S	sw	W	NW	N	Hor
Jan	20.2	157.9	243.4	253.9	243.4	157.9	20.2	20.2	140.3
Feb	52.5	188.6	246.3	238.2	246.3	188.6	52.5	24.6	186.3
Mar	95.5	219.4	234.8	201.8	234.8	219.4	95.5	29.3	227.8
Apr	141.3	224.3	200.7	148.1	200.7	224.3	141.3	34.1	255.2
May	165.9	220.1	171.5	106.1	171.5	220.1	165.9	37.3	267.4
Jun	173.0	215.4	157.5	89.2	157.5	215.4	173.0	47.4	269.3
Jul	163.5	215.7	167.2	102.9	167.2	215.7	163.5	38.2	264.2
Aug	136.2	216.5	193.7	143.1	193.7	216.5	136.2	35.7	250.5
Sep	89.8	206.8	224.9	195.9	224.9	206.8	89.8	30.4	220.2
Oct	51.4	182.2	238.2	231.2	238.2	182.2	51.4	25.4	183.0
Nov	20.6	155.1	239.4	250.0	239.4	155.1	20.6	20.6	139.7
Dec	18.3	140.7	235.7	254.0	235.7	140.7	18.3	18.3	120.5

### MASTER SCHEDULE SUMMARY

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program

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**************************************	****		**** JPANC		****	****				***** tages	****	****
Hour>	0	1	2	3	4	   5	   6	7	8	9	10	11
Weekday		0	0	0	0	0	10	50	100	100	100	100
Saturday	0	0	0	0	0	0	10	10	10	20	20	20
Sunday	0	0	0	0	0	0	10	10	10	10	10	10
DESIGN	0	0	0	0	0	0	10	50	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	80	80	100	100	100	50	50	25	0	0	0	0
Saturday	20	20	20	20	10	10	10	0	0	0	0	0
Sunday	10	10	10	10	10	10	10	0	0	0	0	0
DESIGN	100	100	100	100	100	50	50	25	0	0	0	0
**************************************			**** HTING	****	****	****	***** Hou			***** tages	****	****
	o	1	2	   3	   4	   5	   6	   7	8	9	10	11
Hour>		+ 		   3	<del>"</del> 			' 		<u></u>		<del></del>
Weekday	5	5	5	5	5	5	50	50	100	100	100	100
Saturday	5	5	5	5	5	5	5	10	20	20	20	20
Sunday	5	5	5	5	5	5	10	10	10	10	10	10
DESIGN	5	5	5	5	5	5	50	50	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	100	100	100	50	50	5	5	5
Saturday	20	20	20	20	20	20	20	5	5	5	5	5
Sunday	10	10	10	10	10	10	5	5	5	5	5	5
DESIGN	100	100	100	100	100	100	100	50	50 	5	5	5
**************************************		***** . APP			****	****	***** Hou			***** tages	****	****
Hour>	0	1	2	3 	4 	5 	6	7	8 	9	10	11
Weekday	0	l .	i .	1		1	10			1	50	50
Saturday	0	0	0	0	0	0	10	10	10	10	10	10
Sunday	0	0	0	0	0	0	10	10	10	10	10	10
DESIGN	0	0	0	0	O	0 	10	20	20 	50	50	50
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	50	50	50	50	20	20	20	0	0	0	0	0
Saturday	10	10	10	10	10	10	10	0	0	0	0	0
Sunday	10	10	10	10	10	10	10	0	0	0	0	0
DESIGN	50	50	50	50	20	20	20	0	0	O	0	O
*****	****	****	****	****	****	****	****	****	****	****	****	***

MASTER SCHEDULE SUMMARY

repared By : ENGG APPLICATIONS CONSUL arrier Hourly Analysis Program

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*********	****	****	****	****	****	*****	****	****	****	****	****	* * * *
MASTER SCHEDU	LE 4	. PC'	s 				Hou	rly Po	ercen	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	0	0	0	0	0	10	50	100	100	100	100
Saturday	0	0	0	0	0	0	10	10	10	20	20	20
Sunday	0	0	0	0	0	0	10	10	10	10	10	10
DESIGN	0	0	0	0	0	0	10	50	100	100	100 	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	80	80	100	100	100	50	50	20	0	0	0	0
Saturday	20	20	20	20	10	10	10	0	0	0	0	0
Sunday	10	10	10	10	10	10	10	0	0	0	0	0
Danaay				1	1					. 0	1 0	1 0
DESIGN	100	100	100 	100	100	50	50	20	0			
=	****	****	100 ***** ESTIC	****	****		****	20 ***** rly P	****	****		
DESIGN *********	****	****	****	****	****		****	,  ****	****	****		
DESIGN  ***********************************	***** LE 5	***** . DOM	***** ESTIC	***** HOT \	 ***** WATER	5	Hou	***** rly P	***** ercen	***** tages   9	**** 	****
DESIGN  ***********  MASTER SCHEDU  Hour>	***** LE 5	**** . DOM	**** ESTIC	**** HOT \	***** WATER	5 2	Hour	7 10 2	***** ercen 8 20 5	***** tages   9   20	*****   10   20   5	****   11   80   5
DESIGN  **********  MASTER SCHEDU  Hour> Weekday	***** LE 5	DOM:	***** ESTIC 2 0 0	***** HOT \ 3 0 0 0	****** WATER  0 0 0	5 5 2 0	Hour 6 10 2	7 10 2 2	***** ercen 8 20 5	***** tages   9   20   5   2	*****   10   20   5   2	****   11   80   5
DESIGN  **********  MASTER SCHEDU  Hour> Weekday Saturday	***** LE 5	. DOM	ESTIC	***** HOT \	WATER 4 0	5 2	Hour 6	7 10 2	***** ercen 8 20 5	***** tages   9   20	*****   10   20   5	****   11   80   5
DESIGN  **********  MASTER SCHEDU  Hour> Weekday Saturday Sunday	***** LE 5	DOM:	***** ESTIC 2 0 0	***** HOT \ 3 0 0 0	****** WATER  0 0 0 0	5 5 2 0 5	Hour 6 10 2	7 10 2 2	***** ercen 8 20 5	***** tages   9   20   5   2	*****   10   20   5   2	****   11   80   5
DESIGN  ***********  MASTER SCHEDU  Hour>  Weekday  Saturday  Sunday  DESIGN	***** LE 5	***** DOM 1 0 0 0 0	****** ESTIC  0 0 0 0	HOT 1	****** WATER  0 0 0 0	5 5 2 0 5	6 10 2 0 5	***** rly Po 7 10 2 20 19	***** ercen   8   20   5   2   20	***** tages   9   20   5   2   20   21	*****   10   20   5   2	****   11   80   5   80
DESIGN  **********  MASTER SCHEDU  Hour>  Weekday Saturday Sunday DESIGN  Hour>	****** LE 5   0   0   0   0	***** DOM 1 0 0 0 0 13	****** ESTIC  0 0 0 0 1 14	HOT \   3	****** WATER  0 0 0 0 16	5   5   2   0   5   17	Hour 6 2 0 5 18	***** rly Po 7 10 2 20 19	***** ercen    8   20   5   20   20   20	***** tages   9   20   5   20   21	******   10   20   5   2   20   22	****   11   80   5   2   80   23
DESIGN  *********  MASTER SCHEDU  Hour>  Weekday Saturday Sunday DESIGN  Hour>  Weekday	****** LE 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	***** DOM 1 0 0 0 0 13	****** ESTIC  0 0 0 0 14 20	***** HOT \   3	****** WATER  0 0 0 0 16	5 2 0 5 17 10 10	Hour 6 2 0 5 18 5	***** rly Po 7 10 2 20 19	***** ercen    8   20   5   20   20   5   0   0	***** tages   9   20   5   2   20   21	*****   10   20   5   2   20   22	****   11   80   5   2   80   23
DESIGN  ***********  MASTER SCHEDU  Hour> Weekday Saturday Sunday DESIGN  Hour> Weekday Saturday	****** LE 5  0 0 0 0 1 12 80 5	***** DOM  1  0 0 0 0 13  20 5	****** ESTIC  0 0 0 0 14 20 5	HOT \   3	****** WATER  0 0 0 0 16	5 2 0 5 17 10 2	Hour 6 2 0 5 18 5 2	7 10 2 2 20 19 5 2	***** ercen    8   20   5   20   20   5   0	***** tages   9   20   5   2   20   21   21	******   10   20   5   2   20   22   0	****   11   80   5   2   80   23   0   0

DAY TYPE DATA

Prepared By : ENGG APPLICATIONS CONSUL

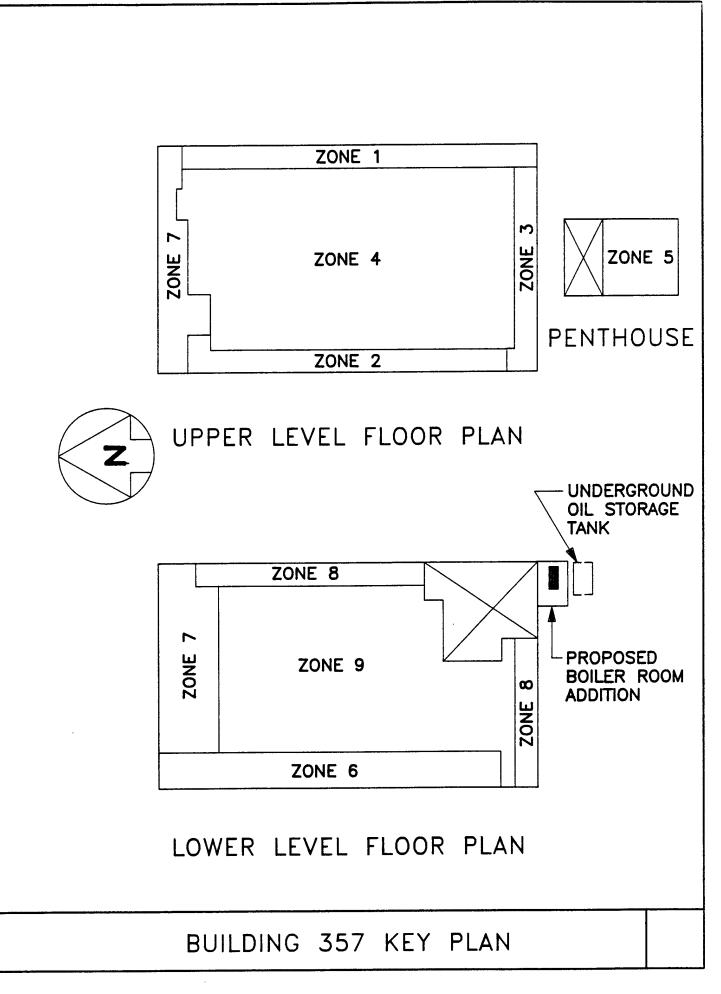
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	DAY TYPE 1	DAY TYPE 2	DAY TYPE 3	Total
Month	Weekday	Saturday	Sunday	Days/Month
January	21	4	6	31
February	19	4	5	28
March	22	5	4	31
April	22	4	4	30
May	22	4	5	31
June	20	5	5	30
July	22	4	5 •	31
August	22	5	4	31
September	20	4	6	30
October	22	4	5	31
November	19	5	6	30
December	21	4	6	31

## ENGINEERING ANALYSIS

		Sheet	e of
		By: _	REF
	Calculations for Infil	teration # 35	7
	Building		
Project: ESOS, Fort E	BELVOIR	Date: OCT,	1990
Contract No: DACA-31-89	-C=0189 EAC Projec	t No.: 89034.0	
Calculations based on	ASHRAE 1989 Page F 2.3.1	4.	
Building Leakage Area			
	Effective Leakage Area, in <sup>2</sup>		Building Leakage Area D <sub>i</sub> L <sub>i</sub> , in <sup>2</sup>
	L,	$\mathbf{D}_{i}$	L
Joints, ceiling/wall Windows Doors Wall - Window frames - Door frames Elec. outlet/switch Recessed lights	C.19/ft. of perimeter O.12/ft. of wall O.063/ft². of window O.215/ft². of doors O.15/ft². of window O.072/ft². of door O.16/fixture 1.5/fixture 1.55/in². of pipe 6.0/fan 2.2/SF 60 x 1/3(SF/unit) x 2.2	518 ft. 2068 ft <sup>2</sup> . 259 ft <sup>2</sup> . 2068 ft <sup>2</sup> . 120 ft. NA ft. 269 ft. 105 ft.	98.4 62.3 55.7 309.6 19.6 2012.2 416.4 630.0 2012.2 112.2
Infiltration Q(cfm) = I	$x (A \Delta t + Bv^2)^{1/2}$		(ASHRAE 1989, P. 23.17, EQ.33)
<u> Iinter</u>	<u>Şumme</u>	er	
$2(cfm) = 0.01313 \times 51 + 0.01$ = L x 2.2 = 20127 x 2.2 = 4427 CFM $2427 \times 2427 \times 242$	,	= L x 1.45 = 2012.2x 1.45 Rate = 2918	5 + 0.0157 x 10 <sup>2</sup> ) <sup>1/2</sup> = 29   8



COMPLEX SPACE DESCRIPTION 10-24-90 Space Name : #357-II FL WEST EXPOSURE 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 Carrier Hourly Analysis Program 1. SPACE NAME = #357-II FL WEST EXPOSURE \*\*\*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 3) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft (BTU/hr/sqft/F) Wall Type 1 M
Wall Type 2 M
Wall Type 3 M м м м 0.230 0.310 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 0.0 0.0 0.0 0.0 NE 0.0 0.0 0.0 0.0 E 0.0 SE 0.0 0.0 S 0.0 0.0 SW 0.0 1,642.0 0.0 0.0 W 0.0 0.0 NW 0.0 0.0 \*\*\*\*\*\*\*\*\*\*\*\* ROOF INFORMATION (Number of Roof Types = 1) Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) Roof 1 M 4. GLASS INFORMATION (Number of Glass Types = 1) \_\_\_\_\_\_\_ U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades \_\_\_\_\_\_\_ 0.500 Glass Type 1 \_\_\_\_\_ <---->
<----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in)

 Shade 1
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 2
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 3
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

Space Name: #357-II FL WEST EXPOSURE 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
Carrier Hourly Analysis Program Page 2 of 2

<				Glass A	reas	(sqft)			>
Exposure		1 Shade		Are		2 Shade	<b>A</b> :	Type rea	3 Shade
NE	0.0	0			NA	NA		NA	NA
E	0.0	0			NA	NA		NA	NA
SE	0.0	0			NA	NA		NA	NA
S	0.0	0			NA	NA		NA	NA
SW	0.0	0			NA	NA		NA	-
W	48.0	0			NA			NA	
NW	0.0	0			NA			NA	-
N	0.0				NA			NA	
H	0.0	0			NA	NA		NA	NA
**************************************		****	****	*****	***	****	*****	*****	*****
SPACE DATA			=	1,704	aqf	t Build	ding Wt.	= M	lb/sqft
PEOPLE				131.1	1	Tota	l People	=	13
EOPLE	Schedul			131.1			vity Lev		2
LIGHTING	 : W/sqft				 7		l Watts	=	3,520
10111110	Schedul						age Mult		
	Fixture						not vent		
OTHER ELECTRIC	: W/sqft Schedul			1.52		Tota	l Watts	=	2,598
AISC. SENSIBLE	· Load			19.300		/hr Sci	hedule N		
	: Load		=				hedule N		4
**************************************	******** INFILTRA	 ***** TION,	***	**************************************	****	****	*****	*****	*****
PARTITIONS (Ne:	xt to Unc	onditi	one	d Spaces	3)	Unc	ondition	ed Spa	ce Temp.
	Area		τ	J-Value		C	ooling F or %)	H	eating
	(sqft)								
Walls	207.0			0.310			85.0 F		
Ceilings	0.0			0.100		9	90.0 F		50.0 F
Floors	0.0			0.100			90.0 F		50.0 F
INFILTRATION						ROUND E	LEMENT		
Cooling : 0.	06 CFM/ea	ft =		102 CI	PM :	Area	:		0.0 sqft
cooring . O.	oo orm, aq			170 C	7M	Dorimet	er :		0 0 ft
Heating : 0. Typical : 0.	10 CFM/em	TT. =			י מיז				V. V I L

10-24-90 Space Name : #357 II FL. NW CORNER 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #357 II FL. NW CORNER \*\*\*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 3) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) -----Wall Type 1 M
Wall Type 2 M
Wall Type 3 M 0.310 0.230 M M 0.310 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 \_\_\_\_\_\_ 0.0 0.0 NE 0.0 0.0 0.0 E 0.0 0.0 SE S 0.0 0.0 0.0 0.0 0.0 218.0 SW W 0.0 0.0 NW 0.0 218.0 0.0 \*\*\*\*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 0.110 \*\*\*\*\*\*\*\*\*\*\*\*\* 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades 0.90 0.500 Glass Type 1 \_\_\_\_\_\_ <---->
<----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) \_\_\_\_\_ Shade 1 8.0 4.0 0.0 0.0 0.0 0.0 Shade 2 8.0 4.0 0.0 0.0 0.0 0.0 0.0 Shade 3 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0

\*\*\*\*\*\*\*\*\*\*\*

Space Name: #357 II FL. NW CORNER 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
Carrier Hourly Analysis Program Page 2 of 2

Exposu	re	<	Type Area	1			_		_		Are	Type	3	
	NE		0.0	0				NA	NA			NA	NA	
	E		0.0	0				NA	NA			NA	NA	
	SE		0.0	0				NA				NA		
	S		0.0	0				NA				NA		
	SW		0.0	0				NA				NA		
	W		0.0	0				NA				NA		
	NW		0.0	0				NA				NA		
	N H		0.0 0.0	0 0				NA NA				NA NA		
***** 5. INT	**** ERNAL	****	******** S	*****	****	****	***	****	*****	****	*****	****	****	**:
SPACE	DATA	:	Floor A	rea	=	3	342	sqft	Bui	lding	y Wt. =	м	lb/s	qft
PEOPLE		:	sqft/per			C					ople			C
			Schedule	e No.	=		1		Act:	ivity	Level	=		2
LIGHTI	NG	:	W/sqft		=	2.	81		Tota	al Wa	tts	=		960
			Schedule	e No.	=		2		Wat	tage	Mult.	=	1	.00
			Fixture	Type	=		1	Rece	essed,	not	vented			
THER	ELECT	RIC:	W/sqft Schedule			0.	3		Tota	al Wa	itts	=		C
MISC.	SENSI	BLE:	Load		=		0	BTU/	hr S	chedu	le No.	=		
MISC.			Load		=						le No.			4
***** 6. PAR	****	***** NS, ]	*******	ion,	GROU		***	***	****	****	*****	****	****	***
PARTIT	IONS	(Next	to Unco	onditi	oned	Spac	es)		Und	condi	tioned	Spac	e Te	mp.
		•	Area			J-Valu					.ng			
		(	(sqft)	(	BTU/	hr/sq	[ft/	F)	(de	g F c	or %)	(deg	F or	8)
Walls			0.0			0.310	)			85.0	) F		55.0	 F
Ceilin	gs		0.0			0.100	)			90.0	F	5	50.0	F
Floors	,		0.0			0.100	)			90.0	F		50.0	
INFILT	RATIC	)N						GF	ROUND 1	ELEME	NT			
			CFM/sqf	ft =		21	CFM	P	rea				).0 s	qft
											_			_
	ng :	0.10	CFM/sqi	:t =		24	CFM		erime	cer	:		0.0 f	L

10-24-90

Space Name: #357-II FL. NORTH EXPOSU 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #357-II FL. NORTH EXPOSU 2. WALL INFORMATION (Number of Wall Types = 3) \_\_\_\_\_ Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) M M M Wall Type 1 M 0.310 Wall Type 2 M
Wall Type 3 M 0.310 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 NE 0.0 0.0 E 0.0 0.0 0.0 0.0 0.0 0.0 SE 0.0 0.0 0.0 S 0.0 0.0 SW 0.0 W 0.0 NW 0.0 680.0 0.0 \*\*\*\*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) \_\_\_\_\_\_ Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) 0.110 4. GLASS INFORMATION (Number of Glass Types = 1) \_\_\_\_\_ U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades \_\_\_\_\_\_ 0.500 0.90 Glass Type 1 <----- External Shading Information ------Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) \_\_\_\_\_\_ 
 Shade 1
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 2
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 3
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

Space Name: #357-II FL. NORTH EXPOSU 10-24-90
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\*\*\*\*\*\*\*\*\*\*\*\*\*

	<			Glass	Areas	(sqft)			>
		ype 1							
Exposure	Area	Sha	de	Aı	:ea	Shade	Are	a	Shade
NE		0.0 0			NA	NA		NA	NA
E		0.0			NA	NA		NA	NA
SE		0.0			NA	NA		NA	NA
S	(	0.0			NA	NA		NA	NA
SW	(	0.0			NA	NA		NA	NA
W		0.0			NA			NA	NA
NW		0.0			NA			NA	NA
N		0.0			NA			NA	NA
Н	(	0.0 0			NA	NA		NA	NA 
**************************************		****	****	*****	****	****	*****	****	*****
SPACE DATA			=	1,01	.8 sqft	Buile	 ding Wt. =	м	lb/sqft
PEOPLE			=====	339.	3	Tota	l People		
	Sched	dule No	. =		1	Acti	vity Level	=	2
IGHTING							l Watts age Mult. not vented		
	Sched	dule No	. =		2	Watta	age Mult.	=	1.00
	Fixt	re Type	= =		1 Rece	essed, 1	not vented		
THER ELECTR					2	Tota	l Watts	=	5,010
		dule No							
MISC. SENSIB	LE: Load		=	7.54	O BTU	hr Scl	nedule No.	 =	
ISC. LATENT			=	,,,,,	O BTU	hr Scl	nedule No. nedule No.	=	4
******	*****	*****	*****	*****	****	*****	******	****	*****
5. PARTITION	s, infil	TRATION .	, GROU	JND					
PARTITIONS (	Next to U	Jncondi	tioned	Space	s)	Unc	onditioned	Spac	e Temp.
	Area		τ	J-Value	<b>:</b>	Co	ooling	He	eating
	(sqft)	)	(BTU/	hr/sqf	t/F)	(deg	F or %)	(deg	F or %)
Walls		0.0		0.310			35.0 F	<b></b> 5	5.0 F
Ceilings		0.0		0.100		g	90.0 F	5	0.0 F
Floors	(	0.0		0.100			90.0 F	5	0.0 F
NFILTRATION					GF	ROUND EI	LEMENT		
Cooling :		/saft =		61 C				C	0.0 sqft
	0 10	/		102 0	ידיע ד				0.0 ft
Heating :	O. IO CEM	BQIL =		102	FF1 E	er rme ce	#E		,. U I L

******	APPLIC	NE CORNE ATIONS C rogram	ONSUL	****	602	0-24-90 2890201 1 of 2 *****
NAME	= #357	-II FL.	NE CORNER			
					******	*****
			Ext Co	 lor	U-Value	
		_			BTU/hr/sqft/F	) 
Type 1		M	М		0.310	
		M				
Type 3		M 	M 		0.310	
D						
exposure 	 	Type I	wall Ty		.r iybe 2	
NE		0.0		0.0	0.0	
E		0.0			0.0	
SE						
·-						
					Area	
	:)	(D,M,L			(sqft	
(lb/sqft					(sqft 36	)
(lb/sqft  M 	****	(D,M,L M *******	) (BT)	U/hr/sqft/F 0.110 *********************************	36	8.0 ******
(lb/sqft  M 	******* ON (Num	(D,M,L M ******* ber of G	) (BTC	U/hr/sqft/F 0.110 ************ = 1)	36	8.0 ******
(lb/sqft  M 	****** ON (Num	(D,M,L M ******* ber of G U-Va (BTU/hr/	) (BTO	U/hr/sqft/F 0.110 ************ = 1)	36 ************************************	) 8.0 *****
(lb/sqft	******** DN (Num	(D,M,L M ******** ber of G U-Va (BTU/hr/ 0.5	) (BTO	0.110 ***********************************	Internal Shades	) 8.0 ****** 
(lb/sqft	****** ON (Num	(D,M,L  M  ****** ber of G  U-Va (BTU/hr/  0.5  Extern Reveal	) (BTO	J/hr/sqft/F  0.110  ********  = 1)  Glass Factor  0.90  Informatic Overhang	Internal Shades	) 8.0 ****** > Fin
(lb/sqft	v****** N (Num	(D,M,L  M  ******* ber of G  U-Va (BTU/hr/  0.5  Extern  Reveal Depth (in)	) (BTO	J/hr/sqft/F  0.110  ********  = 1)  Glass Factor  0.90  Informatic Overhang Extension (in)	Internal Shades  N  Separation (in)	8.0 ****** Fin Exten. (in)
(lb/sqft	Vindow Width (ft)	(D,M,L  M  ******* ber of G  U-Va (BTU/hr/  0.5  - Extern Reveal Depth (in)	) (BTO	J/hr/sqft/F  0.110  ********  = 1)  Glass Factor  0.90  Informatic Overhang Extension (in)	Internal Shades  N  Separation (in)	8.0 ****** Fin Exten. (in)
(lb/sqft	Vindow Width (ft)	(D,M,L  M  ******* ber of G  U-Va (BTU/hr/  0.5  - Extern Reveal Depth (in)	) (BTO	J/hr/sqft/F  0.110  ********  = 1)  Glass Factor  0.90  Informatic Overhang Extension (in)  0.0	Internal Shades  N  Separation (in)	8.0 ****** Fin Exten. (in)
1	Type 1 Type 2 Type 3  Exposure  NE E SE SW W NW NW N N ************************	NFORMATION (Number of Number of Numb	Weight (lb/sqft)  Type 1 M Type 2 M Type 3 M  Exposure Wall Type 1  NE 0.0 E 0.0 SE 0.0 SE 0.0 SW 0.0 W 0.0 NW 0.0 NW 0.0 NW 0.0 NW 0.0 NW 0.0	Weight	Weight   Ext Color   (1b/sqft)   (D,M,L)   (Ext Color   (1b/sqft)   (1b/sqft)   (Ext Color   (1b/sqft)   (1b/sqft)   (Ext Color   (1b/sqft)   (1b/sqft)   (Ext Color   (1b/sqft)   (1b/sqft	Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F)  Type 1 M M 0.310  Type 2 M M 0.230  Type 3 M M 0.310  < Net Wall Areas (sqft)>  Exposure Wall Type 1 Wall Type 2 Wall Type 3  NE 0.0 0.0 0.0  E 0.0 152.0 0.0  SE 0.0 0.0 0.0  SE 0.0 0.0 0.0  SW 0.0 0.0 0.0  SW 0.0 0.0 0.0  NW 0.0 86.0 50.0

Space Name: #357-II FL. NE CORNER 10-24-90
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4. GLASS INFORMATION (con	tinued)	ł
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		<				Glass										>
			Type						2					Type		
Exposure	e 		Area	Shad	e 		\rea	l 	Shac	le 		A 	rea	1 	Shad 	ie 
NI	E		0.0	0				NA	NA					NA	NA	
1	E		32.0	0				NA	NA					NA	NA	
SI	E		0.0	0				NA	NA					NA		
	S		0.0	0				NA	NA					NA		
Si	W		0.0	0				NA	NA					NA		
	W		0.0	0				NA						NA		
N			0.0	0				NA	NA					NA		
	N 		128.0					NA	NA NA					NA NA		
	H 		0.0					NA								
****** 5. INTE			******* )S	****	****	****	***	****	****	***	***	***	**	***	****	***
SPACE DA	ATA	<b>-</b> :	Floor A	rea	=		368	sqft	: Bu	ild	ing	Wt.	=	М	lb/s	gft
PEOPLE			sqft/per	cson	=	368	3.0		To	otal	Pe	ople		=		
			Schedule						Ac		ity	Lev	el			2
LIGHTING	 G	:	W/sqft		=	2.	17		To	otal	Wat	tts		=		800
			Schedule											=	1	00
			Fixture	-			1									
									 						1,	120
OTHER E	LECTR	ic:	W/sqft Schedule			3.	3		TC	otal	wa	CCB		_	Δ,	. 13(
AISC. SI	 ENSTB	 LE:	Load		=		0	BTU	hr	Sche	edu:	le N	··	=		4
			Load		=				'hr							4
*****	****	***	*****	****	****	*****	***	***	***	***	***	***	**:	***	****	***
5. PART	ITION	s, :	INFILTRA	rion,	GRO	UND 										
PARTITIO	ONS (	Next	t to Unco	ondit	ione	d Spac	ces)		τ	Jncoi	ndi	tion	ed	Spa	ce Te	emp.
	•		Area		Ţ	y-Valu	ıe İ			Cod	oli	ng		H	eatin	ıg
			(sqft)		(BTU	/hr/so	ift/	F)	(0	ieg 1	Fo	r *)	ı	(deg	F or	· %)
Valls			0.0			0.310	)			8	5.0	F			55.0	F
Ceiling	s		0.0			0.100				90	0.0	F		!	50.0	F
Floors			0.0			0.100	)			90	0.0	F		!	50.0	F
INFILTR	ATION							GI	ROUNI	ELI	EME	NT				
			6 CFM/sq	ft =			CFM		Area			:		(	0.0 s	gft
	_															
	g :	0.10	CFM/sq:	ft =		37	CFM	1	erin	nete	r	:		,	0.0 f	τ

10-24-90

Space Name : #357-II FL. EAST EXPOSUR Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Carrier Hourly Analysis Program Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #357-II FL. EAST EXPOSUR 2. WALL INFORMATION (Number of Wall Types = 3) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) M M M Wall Type 1 M Wall Type 2 0.230 Wall Type 3 M 0.310 \_\_\_\_\_\_ <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 \_\_\_\_\_ 0.0 0.0 0.0 1,347.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 E SE 0.0 S SW 0.0 0.0 W 0.0 NW 0.0 0.0 0.0 0.0 0.0 \*\*\*\*\*\*\*\*\* ROOF INFORMATION (Number of Roof Types = 1) \_\_\_\_\_ Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades 0.500 0.90 Glass Type 1 <---->
<----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) \_\_\_\_\_ 
 Shade 1
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 2
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 3
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

Space Name: #357-II FL. EAST EXPOSUR 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
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Exposure		Type Area	1		Glass A	Гуре	2	Are	Type a	
NE		0.0	0			NA	NA		NA	NA
E		608.0	0			NA	NA		NA	NA
SE		0.0	0			NA			NA	
S		0.0	0				NA		NA	
SW		0.0	0				NA		NA	
W		0.0	0				NA		NA	
NW		0.0	0				NA		NA	
N H		0.0 0.0	0			NA NA			NA NA	
************ 5. INTERNAL L	* * * OAI	******** S	****	****	*****	***	*****	*****	****	******
SPACE DATA	:	Floor A	rea	=	2,040	sqf	Build	ing Wt. =	M	lb/sqft
PEOPLE	:	sqft/per Schedule			136.0 1			People ity Level		15 2
LIGHTING	:		e No.	=	2.35 2 1		Watta	Watts ge Mult. ot vented	=	4,800 1.00
OTHER ELECTRI	 C:	W/sqft Schedule			6.10 3		Total	Watts	=	12,450
MISC. SENSIBL MISC. LATENT		Load Load		=				edule No. edule No.		4
************* 6. PARTITIONS	***	*********	**** TION,	**** GRO	********* JND	****	*****	*****	****	*****
PARTITIONS (N		Area		τ	J-Value		Co	nditioned oling F or %)	He	eating
Walls		0.0			0.310		8	5.0 F		55.0 F
Ceilings		0.0			0.100		9	0.0 F	!	50.0 F
Floors		0.0			0.100			0.0 F	!	50.0 F
INFILTRATION	_					GI	ROUND EL			
Cooling : 0	.06	CFM/sq	ft =		122 CF	4 2	Area	:	(	0.0 sqft
Heating : 0	.10	CFM/sq	Et =		204 CF	4 1	Perimete		(	0.0 ft
			e 4		204 CF1		<b>3</b>	:	,	0.0 ft

COMPLEX SPACE DESCRIPTION Space Name : #357-II FL SE EXPOSURE 10-24-90 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Carrier Hourly Analysis Program Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #357-II FL SE EXPOSURE \*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 3) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) M M M м м м Wall Type 1 0.310 Wall Type 2 0.230 Wall Type 3 0.310 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 
 NE
 0.0
 0.0
 0.0

 E
 0.0
 152.0
 0.0

 SE
 0.0
 0.0
 0.0

 S
 0.0
 122.0
 0.0

 SW
 0.0
 0.0
 0.0
 W 0.0 0.0 0.0 NW 0.0 0.0 0.0 0.0 0.0 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) 4. GLASS INFORMATION (Number of Glass Types = 1) \_\_\_\_\_ U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades \_\_\_\_\_\_ 0.500 0.90 Glass Type 1 <---->
External Shading Information -----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) Shade 1 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 Shade 2 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 Shade 3 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0

Space Name: #357-II FL SE EXPOSURE 10-24-90
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<			(				)		
Exposure	Area	1 Shade		Area	Type	Shade	Are	a a	Shade
NE	0.0	0			NA	NA		NA	NA
E	23.0	0			NA	NA		NA	NA
SE	0.0	0			NA	NA		NA	NA
S	16.0				NA			NA	
SW	0.0					NA		NA	
W	0.0					NA		NA	
NW	0.0					NA		NA	
N H	0.0					NA NA		NA NA	
**************************************		*****	****	******	****	*****	*****	****	*****
SPACE DATA	Floor A	rea 	=	192	sqft	Buil	lding Wt. =	M 	lb/sqft
PEOPLE :	sqft/pe	rson	=	192.0		Tota	al People	=	1
	Schedule	e No.	=	1		Acti	ivity Level	=	
LIGHTING							al Watts		
	Schedule			2		Watt	age Mult.	=	1.00
	Fixture		=	1	Rece	essed,	not vented		
OTHER ELECTRIC	: W/sqft		=			Tota	al Watts	=	830
	Schedul	e No.	=	3					
MISC. SENSIBLE:	Load		=	0	BTU	hr Sc	chedule No.	=	4
MISC. LATENT									
******	*****	*****	****	******	****	*****	*****	****	*****
6. PARTITIONS,	INFILTRA	rion,	GROU	ND 					
PARTITIONS (Nex	t to Unc	onditi	oned	Spaces)	<b>,</b>	Unc	conditioned	Spac	e Temp.
·	Area			-Value			Cooling		eating
	(sqft)	(	BTU/	hr/sqft/	F)	(deg	F or %)	(deg	F or %)
Walls	0.0			0.310			85.0 F	<u>-</u>	55.0 F
Ceilings	0.0			0.100			90.0 F		0.0 F
Floors	0.0			0.100			90.0 F		50.0 F
INFILTRATION					GF	ROUND E	ELEMENT		
Cooling : 0.0	06 CFM/sq	ft =		12 CFM			:	C	0.0 sqft
Heating : 0.1	LO CFM/sq:	ft =		19 CFN	1 I	Perimet	er :	C	0.0 ft
Typical : 0.	O CFM/sq	ft = 		19 CFM	1 1	epth	:		0.0 ft
*****	*****	<del></del>	***	*****	****	*****	******	****	

Space Name Prepared F	By : ENG	-II FL S	OUTH EXP			****	602	0-24-90 2890201 1 of 2
1. SPACE N	IAME	= #357	-II FL S	OUTH EXP.				
2. WALL IN	FORMATIC	ON (Numb	er of Wa	ll Types =				
			eight	Ext Co		ט		
			/sqft)	(D,M,	-		hr/sqft/F	)
	Type 1			M			0.310	
	Type 2		M	М			0.230 0.310	
wall	Type 3		M	M				
	a			t Wall Are				
	exposure	 wali	Type I	Wall Ty	pe 2	 Mall 1	 Abe 2	
	NE		0.0		0.0		0.0	
	E		0.0		0.0		0.0	
	SE S		0.0 0.0	5	0.0 80.0		0.0 0.0	
	SW		0.0		0.0		0.0	
	W		0.0		0.0		0.0	
	NW		0.0		0.0		0.0	
	N		0.0		0.0		0.0	
	Weigh (lb/sq:	 ht ft)	Ext Col	or ) (BT		<del></del>	Area (sqft	
Roof 1	м		м		0.110		26	4.0
			ber of G	********** lass Types				*****
			U-Va /BTU/hr)	sqft/F)			Internal Shades	
Gla	ass Type	1	0.5	00	0.	90	N	
	<		- Extern	al Shading	Inform	ation -		>
		Window		Overhang		_	Fin	Fin
	-		Depth	Height				Exten.
	(ft)	(ft) 	(in)	(in)	-	in) 	(in)	(in)
Shade 1	8.0	4.0	0.0	0.0		0.0	0.0	0.0
Shade 2	8.0		0.0	0.0		0.0	0.0	0.0
Shade 3	8.0	4.0	0.0	0.0	•	0.0	0.0	0.0
*****	*****	******	*****	******	*****	*****	*****	*****

Space Name: #357-II FL SOUTH EXP. 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
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<-			(	Glass A	reas	(sqft)			>
Exposure		1		Area	Type	2	Are	Type	3
NE	0.0	0			NA	NA		NA	NA
E	0.0	0			NA	NA		NA	NA
SE	0.0	0			NA	NA		NA	NA
S	144.0	0			NA	NA		NA	NA
SW	0.0	0			NA	NA		NA	NA
W	0.0				NA	NA		NA	NA
NW	0.0	0			NA	NA		NA	NA
N	0.0	0			NA	NA		NA	NA
H	0.0	0			NA	NA		NA	NA
5. INTERNAL LO	ADS : Floor A	 rea		756	saft	Build:	ing Wt. =		lb/saf
PEOPLE	: sqft/pe:	rson	=	151.2		Total	People	=	!
	Schedule			1			ity Level		
GHTING	: W/sqft Schedule						Watts ge Mult.		
	Fixture						ot vented		1.0
THER ELECTRIC	: W/sqft Schedule			1.76 3		Total	Watts	=	1,330
AISC. SENSIBLE	: Load		=	9,350	BTU	hr Sche	edule No.	=	
MISC. LATENT	: Load		=	0	BTU	hr Sche	edule No.	=	4
	*********	rion, o	****	******** ND	****	*****	*****	****	******
PARTITIONS (Ne:	xt to Unc	onditio	oned	Spaces)	)	Uncor	nditioned	Spac	e Temp
	Area		ŋ.	-Value		Cod	oling	He	ating
	(sqft)	( I	BTU/I	hr/sqft/	F)	(deg 1	or %)	(deg	F or %
Valls	0.0					۰	.0 F		
Ceilings	0.0			0.100			).O F		
Floors	0.0			0.100			).0 F		0.0 F
. TOOL B									
NFILTRATION					GF	ROUND ELE	EMENT		
Cooling : 0.	06 CFM/sq:	ft =		45 CFN	1 P	Area	:	C	0.0 sqf
	10 001/	e		76 CEN	, T	Perimeter			0.0 ft
Heating : 0. Typical : 0.	IO CFM/BQ:	[C =		70 CFF		epth			,.U IL

10-24-90 Space Name : #357-II FL SW CORNER 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 Carrier Hourly Analysis Program 1. SPACE NAME = #357-II FL SW CORNER \*\*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 3) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) Wall Type 1 M M
Wall Type 2 M M
Wall Type 3 M M 0.230 0.310 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 NE 0.0 0.0 E 0.0 0.0 SE 0.0 0.0 S 0.0 122.0 SW 0.0 0.0 0.0 0.0 0.0 0.0 W 0.0 0.0 NW 0.0 0.0 \*\*\*\*\*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) Roof 1 M 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades \_\_\_\_\_ Glass Type 1 0.500 0.90 \_\_\_\_\_ <---->
External Shading Information -----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) \_\_\_\_\_\_ 

 Shade 1
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 2
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 3
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

Space Name : #357-II FL SW CORNER Prepared By : ENGG APPLICATIONS CONSUL

10-24-90 6022890201

Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*

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	<				Glass	Ar	eas	(sqft)				>
Exposure			1			T	ype	2 Shade		Are	Type a	3 Shade
NE		0.0	0				NA	NA				NA
E		0.0	0				NA	NA			NA	NA
SE		0.0						NA			NA	
S		16.0						NA			NA	=
SW		0.0						NA			NA	
W		0.0						NA			NA	
NW		0.0					NA				NA	
N H		0.0 0.0						NA NA			NA NA	NA NA
********* 5. INTERNA			****	***		***	****	*****	***	*****	****	*****
SPACE DATA		Floor A									М	lb/sqf
PEOPLE	:	sqft/pe: Schedule	rson e No.	=	96	.0		Tota: Acti	l P∈ ⁄ity	ople Level	=	
LIGHTING		Schedule Fixture	e No. Type	=======================================	2.	50 2		Tota: Watta	L Wa	itts Mult.	==	48
OTHER ELEC	TRIC:			=				Tota	L Wa	itts	=	1,13
MISC. SENS MISC. LATE				=		0	BTU/ BTU/	hr Scl	nedu	le No.	=	
********** 6. PARTITI									***	*****	****	*****
PARTITIONS	(Nex	t to Unc	onditi	one	i Spac	es)		Unco	ondi	tioned	Space	e Temp
	,	Area		į	J-Valu	e ,		C	ooli	ng	He	eating
		(sqft)	(	BTU,	/hr/sq	ft/	F)	Cdeg	FC	or %)	(deg	F or %
Walls		0.0			0.310				35.0	 )		55.0 F
Ceilings		0.0			0.100			9	90.0	F		0.0 F
Floors		0.0			0.100		· 		90.0	) F	!	0.0 F
INFILTRATI	on						GF	ROUND E	LEME	ENT		
Cooling		6 CFM/sq	ft =		12	CFM		Area		:	(	0.0 sqf
		O CFM/sq			19	CEM	t	Perimete Depth	<b>عرد</b>	•		0.0 ft
nearring		,										

Space Name: #357-II FL SE INTERIOR 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
Carrier Hourly Analysis Program Page 1 of 2

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1. SPACE NAME = #357-II FL SE INTERIOR

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

2. WALL INFORMATION (Number of Wall Types = 3)

	Weight (lb/sqft)	Ext Color (D,M,L)	U-Value (BTU/hr/sqft/F)
Wall Type 1	м	M	0.310
Wall Type 2	M	M	0.230
Wall Type 3	M	M	0.310
+++++	Net	Wall Areas (sq	ft)>

Exposure	< Net Wall Type 1	(	> all Type 3
NE	0.0	0.0	0.0
E	0.0	0.0	0.0
SE	0.0	0.0	0.0
s	0.0	0.0	0.0
SW	0.0	0.0	0.0
W	0.0	0.0	0.0
NW	0.0	0.0	0.0
N	0.0	0.0	0.0

3. ROOF INFORMATION (Number of Roof Types = 1)

)	Weight (lb/sqft)	Ext Color (D,M,L)	U-Value (BTU/hr/sqft/F)	Area (sqft)
Roof 1	м	м	0.110	1,640.0
		******	******	*****

\*\*\*\*\*\*\*\*\*\*\*\*\*\*

4. GLASS INFORMATION (Number of Glass Types = 1)

				U-Va (BTU/hr/		Glass Factor	Internal Shades	
	Glass	Type	1	0.5	500	0.90	N	
	<			- Extern	al Shading	Informatio	n	>
	Wi	ndow	Window	Reveal	Overhang	Overhang	Fin	Fin
	He	ight	Width	Depth	Height	Extension	Separation	Exten.
		(ft)	(ft)	(in)	(in)	(in)	(in)	(in)
Shade	1	8.0	4.0	0.0	0.0	0.0	0.0	0.0
Shade	2	8.0	4.0	0.0	0.0	0.0	0.0	0.0
Shade	3	8.0	4.0	0.0	0.0	0.0	0.0	0.0

Space Name : #357-II FL SE INTERIOR
Prepared By : ENGG APPLICATIONS CONSUL

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Carrier Hourly Analysis Program Page 2 of 2

	<	Type			Glass			(sqft)			Type		->
Exposure		Area		e	7	rea		2 Shade		Ar			е
NE		0.0	0					NA				NA	
E		0.0	Ö					NA			NA		
SE		0.0	ō					NA			NA	NA	
S		0.0	0				NA	NA			NA	NA	
SW		0.0	0				NA	NA			NA	NA	
W		0.0	0				NA	NA			NA		
NW		0.0	0					NA			NA		
N		0.0	0					NA			NA		
H 		0.0	0				NA	NA 			NA	NA 	
*****	****	*****	****	****	****	***	***	*****	***	****	****	****	***
5. INTERNA	L LOA	os 											
SPACE DATA	:	Floor A	ea	=	1,6	40	sqft		-	Wt.		lb/s	_
PEOPLE	:	sqft/per	son	=	328	3.0							
		Schedule	No.	=				Acti	vity	Leve	<b>1</b> =		2
LIGHTING		W/saft		_	1	85		Tota	1 W-	++-	_	3.0	 040
	•	Schedule	No.	=		2		Watt	age	Mult.	=	1.	.00
		Fixture	Type	=		1	Rece	essed,	not	vente	d		
OTHER ELEC	TRIC:	W/saft		=	1.	19		Tota	l Wa	tts	=	1,9	950
		Schedule				3							
MISC. SENS	IBLE:	Load			19.2	280	BTU	hr Sc	hedu	le No	. =		 4
MISC. LATE				=		0	BTU/	hr Sci	hedu	le No	. =		4
					*****	***	****	******	 ****	****	****	 *****	 * * *
6. PARTITI							.,						
PARTITIONS	(Next	t to Unco	ondit	ioned	Spac	 :es)		Unc	ond i	tione	d Spac	ce Ter	 .cm
	(2.022	Area			J-Valu					.ng			
		(sqft)		(BTU/	/hr/sq	ɪft/	F)						
	·	0.0			0.310				 85.0			55.0 1	 F
Ceilings		0.0			0.100					F		50.0 1	
Floors		0.0			0.100				90.0			50.0 1	
INFILTRATI			• 4			~~··		ROUND E				٠	<i>E</i> ,
Cooling					98			Area				0.0 s	_
Heating Typical	: 0.10	O CEM/SQ	[C =		164	CEM	. <u>1</u>	erimet(	=E	:		0.0 ft 0.0 ft	
IVDICAL	: U. 19	U C.M./80)	. L =		704	UF M		-ehrm		÷		JOU II	_

10-24-90 Space Name : #357 II FL CENTRAL INTER 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #357 II FL CENTRAL INTER \*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 3) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) Wall Type 1 M M 0.310 M M Wall Type 2 Wall Type 3 M 0.310 \_\_\_\_\_ <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 0.0 0.0 0.0 NE 0.0 0.0 0.0 E 0.0 0.0 SE 0.0 0.0 S 0.0 0.0 SW 0.0 W 0.0 NW 0.0 0.0 0.0 0.0 \*\*\*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) 0.110 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades \_\_\_\_\_ \_\_\_\_\_ 0.500 0.90 Glass Type 1 \_\_\_\_\_\_ <----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) \_\_\_\_\_\_ Shade 1 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 Shade 2 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 Shade 3 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0

Space Name: #357 II FL CENTRAL INTER 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
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Exposure	<	Type Area	1			7		2	-		Type	3	> ade
NE		0.0	0				NA NA				NA NA	N2 N2	-
E SE		0.0	0				NA NA				NA NA		_
S		0.0	Ö				NA				NA		
sw		0.0	Ö				NA				NA		
W		0.0	0				NA	NA			NA	N2	A
NW		0.0	0				NA	NA			NA	NA	A
N		0.0	0				NA				NA		
H		0.0	0				NA	NA			NA	N?	A.
******** 5. INTERNA	***** L LOAI	******** OS	****	****	****	***	****	****	***	*****	****	***	****
SPACE DATA	:	Floor A	ea	=	11,	234	sqft	Bui	ldin	g Wt. =	M	1b/	/sqf
PEOPLE	:	sqft/per	son	=	102:	1.3		Tot	al P	eople	=		1
		Schedule				1				y Level			
JIGHTING		W/sqft			0.	 . 70		Tot	al W	 atts	=		 7,84
	•	Schedule	No.		•	2				Mult.			1.0
		Fixture				1	Rece		_	vented			
THER ELEC	TRIC:	W/sqft Schedule			0	.30 3		Tot	al W	atts	=	3	3,32
SISC. SENS		Load Load		= = =	41,4					ule No. ule No.			
********* 5. PARTITI	***** ONS,	********	**** TION,	****	****	****	****	****	***	*****	****	***	***
PARTITIONS	(Next		ondit		_		)				_		_
		Area			J-Valı		· ·			ing			ing
		(sqft)		(BTU/	hr/so	1ft/	(F)	(de	J F (	or %)	(deg	FC	or %
Valls		0.0			0.310	כ			85.	O F	5	55.0	F
Ceilings		0.0			0.100	)				) F	5	50.0	F
Floors		0.0			0.100	)			90.	O F		50.0	F
INFILTRATI	ON						GF	ROUND	ELEM	ENT			
Cooling		6 CFM/sqf	ft =		674	CFM					C	0.0	sqf
Heating									ter	:		0.0	_
								epth				_	ft

10-24-90 Space Name : #357-II FL NORTH INTRIOR 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #357-II FL NORTH INTRIOR \*\*\*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 3) \_\_\_\_\_\_ Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) M 0.310 M 0.230 M 0.310 M Wall Type 1 Wall Type 2 M
Wall Type 3 M \_\_\_\_\_\_ <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 
 NE
 0.0
 0.0
 0.0

 E
 0.0
 0.0
 0.0

 SE
 0.0
 0.0
 0.0
 0.0 0.0 SE 0.0 0.0 0.0 S 0.0 0.0 0.0 SW 0.0 W NW 0.0 0.0 0.0 0.0 0.0 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) \_\_\_\_\_\_ Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) 0.110 4. GLASS INFORMATION (Number of Glass Types = 1) \_\_\_\_\_ U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades Glass Type 1 0.500 0.90 <---->
<----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) 
 Shade 1
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 2
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 3
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

Space Name: #357-II FL NORTH INTRIOR 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
Carrier Hourly Analysis Program Page 2 of 2

\*\*\*\*\*\*\*\*\*\*\*

LIGHTING : W/sqft = 2.62 Total Watts = 8,5				,			(sqft)			
NE										
E	Exposure	Area	Shade	<del></del>	Are	1 	Shade	Are 	a 	Shade
SE	NE	0.0	0			NA	NA		NA	NA
S	E	0.0	0			NA	NA		NA	NA
SW	SE	0.0	0			NA	NA		NA	NA
W 0.0 0 NA NA NA NA NA NA NA NA NA NA NA NA NA	S	0.0	0			NA	NA		NA	NA
NW 0.0 0 NA NA NA NA NA NA NA NA NA NA NA NA NA	SW	0.0	0			NA	NA		NA	NA
N 0.0 0 NA NA NA NA NA NA NA NA NA NA NA NA NA	W	0.0	0			NA	NA		NA	NA
# 0.0 0 NA NA NA NA NA NA NA NA NA NA NA NA NA	NW	0.0	0			NA	NA		NA	NA
### S. INTERNAL LOADS    SPACE DATA	N	0.0	0			NA	NA		NA	NA
### SPACE DATA : Floor Area = 3,175 sqft Building Wt. = M lb/sc    PEOPLE	H	0.0	0			NA	NA		NA	NA
PEOPLE : sqft/person = 211.7 Total People = Schedule No. = 1 Activity Level =   LIGHTING : W/sqft = 2.62 Total Watts = 8, Schedule No. = 2 Wattage Mult. = 1 Recessed, not vented	*************** 5. INTERNAL LOA	******** DS	****	****	*****	****	*****	*****	****	******
Schedule No. =   1	SPACE DATA :	Floor A	rea	=	3,175	sqft	Buildin	g Wt. =	м	lb/sqft
Schedule No. = 1		eaft /per	aon	=	211 7		Total P	eonle	=	1:
Schedule No. = 2	EOPLE :									
Schedule No. = 2 Wattage Mult. = 1.  Fixture Type = 1 Recessed, not vented  OTHER ELECTRIC: W/sqft = 3.18 Total Watts = 10,  Schedule No. = 3  MISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,		Schedule	. NO.					-		
Schedule No. = 2 Wattage Mult. = 1.  Fixture Type = 1 Recessed, not vented  OTHER ELECTRIC: W/sqft = 3.18 Total Watts = 10,  Schedule No. = 3  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. SENSIBLE: Load = 31,400 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 0 BTU/hr Schedule No. = 4  GISC. LATENT : Load = 10, 10, 10  GISC. LATENT : Load = 10,	TGHTING .	W/saft		=	2.62		Total W	atts	=	8.320
### Fixture Type = 1 Recessed, not vented    OTHER ELECTRIC: W/sqft					2.02					1.00
THER ELECTRIC: W/sqft										2.00
Schedule No. = 3   3   3   3   3   3   3   3   3   3										
Schedule No. = 3   3   3   3   3   3   3   3   3   3	THER ELECTRIC:	W/saft		=	3.18		Total W	atts	=	10,110
### AISC. LATENT : Load										
### AISC. LATENT : Load										
PARTITIONS, INFILTRATION, GROUND  PARTITIONS (Next to Unconditioned Spaces) Unconditioned Space Terman (sqft) (BTU/hr/sqft/F) (deg F or %) (deg F or	MISC. SENSIBLE:	Load		=	31,400	BTU/	hr Sched	ule No.	=	4
PARTITIONS, INFILTRATION, GROUND  PARTITIONS (Next to Unconditioned Spaces)  Area  (sqft)  (BTU/hr/sqft/F)  (deg F or %)  (deg F	MISC. LATENT :	Load		=	0	BTU/	hr Sched	ule No.	=	4
Area (sqft) (BTU/hr/sqft/F) (deg F or %) (de						****	*****	*****	****	******
Area U-Value Cooling Heating (sqft) (BTU/hr/sqft/F) (deg F or %) (deg	PARTITIONS (Nex	t to Unco	onditi	loned	Spaces	)	Uncond	itioned	Spac	e Temp.
Walls 0.0 0.310 85.0 F 55.0 E Ceilings 0.0 0.100 90.0 F 50.0 E Floors 0.0 0.100 90.0 F 50.0 E Floors 0.0 GROUND ELEMENT Cooling: 0.06 CFM/sqft = 191 CFM Area : 0.0 sq Heating: 0.10 CFM/sqft = 318 CFM Perimeter: 0.0 ft	•			ŋ.	-Value		Cool	ing	He	
Ceilings 0.0 0.100 90.0 F 50.0 I Floors 0.0 0.100 90.0 F 50.0 I  INFILTRATION GROUND ELEMENT  Cooling: 0.06 CFM/sqft = 191 CFM Area : 0.0 sq Heating: 0.10 CFM/sqft = 318 CFM Perimeter: 0.0 ft		(sqft)	(	(BTU/	hr/sqft,	F)	(deg F	or %)	(deg	F or %)
Ceilings 0.0 0.100 90.0 F 50.0 I Floors 0.0 0.100 90.0 F 50.0 I  INFILTRATION GROUND ELEMENT  Cooling: 0.06 CFM/sqft = 191 CFM Area : 0.0 sq Heating: 0.10 CFM/sqft = 318 CFM Perimeter: 0.0 ft		0.0			0.310		85	 O F		5.0 F
The color										
Cooling : 0.06 CFM/sqft = 191 CFM Area : 0.0 sq Heating : 0.10 CFM/sqft = 318 CFM Perimeter : 0.0 ft	_									
Heating : 0.10 CFM/sqft = 318 CFM Perimeter : 0.0 ft	 INFILTRATION					GF	OUND ELEM	ENT		
Heating : 0.10 CFM/sqft = 318 CFM Perimeter : 0.0 ft		6 CFM/Bai	ft =		191 CF				(	0.0 sqft
•							erimeter	:		_
TABLEST . O. TO CLEW BOTT - 210 OLD BODGE								:	C	0.0 ft

COMPLEX SPACE DESCRIPTION 10-24-90 Space Name : #357-II FL CORRIDORS 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #357-II FL CORRIDORS \*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 3) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) Wall Type 1 M M
Wall Type 2 M M
Wall Type 3 M M 0.310 0.230 0.310 \_\_\_\_\_\_\_ <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 NE 0.0 0.0 0.0 0.0 E 0.0 0.0 SE 0.0 0.0 0.0 0.0 0.0 0.0 S 0.0 0.0 SW 0.0 W 0.0 NW 0.0 0.0 0.0 0.0 \*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) \_\_\_\_\_ Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) 0.110 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades 0.500 0.90 Glass Type 1 \_\_\_\_\_\_ <----- External Shading Information -------Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten.
(ft) (ft) (in) (in) (in) (in) 

 Shade 1
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 2
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 3
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0

Space Name: #357-II FL CORRIDORS 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
Carrier Hourly Analysis Program Page 2 of 2

Exposure	Type 1			ype :	(sqit) 2 Shade	Тy	pe 3	
NE	0.0	0		NA	NA		NA	NA
E	0.0	0		NA	NA		NA	NA
SE	0.0	0		NA	NA			NA
S	0.0	0		NA	NA			NA
SW	0.0	0		NA	NA			NA
W	0.0	0		NA	NA			NA
NW	0.0	0		NA	NA		NA	NA
N	0.0	0		NA	NA			NA
H	0.0	0		NA	NA		NA	NA
**************************************	*********** ADS : Floor Are	*****	********  4 - 740	saft	********* 	******** 	****  M 1	***** 
PACE DATA								
PEOPLE	: sqft/pers	on =	0.0		Total Pe	eople =		
	Schedule		1			/ Level =		
LIGHTING	: W/sqft					atts =		7,040
	Schedule Fixture T				ssed, not	Mult. =		1.0
	TIXCULE I	Abe -						
OTHER ELECTRIC	: W/sqft Schedule		0.00		Total Wa	atts =		
MISC. SENSIBLE								
MISC. LATENT	: Load	=	0	BTU/	hr Sched	le No. =		4
6. PARTITIONS,				****	*****	*****	****	*****
PARTITIONS (Ne								
	Area		U-Value			-		ting
	(sqft)	(BTU	/hr/sqft/	F)	(deg F	or %) (d	eg F	or #
	0.0		0.310		85.0	) F	55	.0 F
Ceilings	0.0		0.100			F		0.0 F
Floors	0.0		0.100			F		.0 F
INFILTRATION Cooling : 0. Heating : 0. Typical : 0.	10 CFM/sqft	=	474 CF	A A	erimeter	<b>:</b>	0.	0 sqf 0 ft 0 ft

10-24-90 Space Name : #357-PENTHOUSE 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program 1. SPACE NAME = #357-PENTHOUSE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 3) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) м м м M 0.310 M 0.230 M 0.310 Wall Type 1 Wall Type 2 Wall Type 3 \_\_\_\_\_\_ <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 \_\_\_\_\_ 0.0 296.0 0.0 NE 0.0 0.0 0.0 0.0 E 0.0 0.0 SE 140.0 0.0 0.0 0.0 S 0.0 SW 0.0 0.0 0.0 424.0 W 0.0 NW 0.0 0.0 424.0 0.0 \*\*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) 0.110 \*\*\*\*\*\*\*\*\*\*\* 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades 0.500 0.90 Glass Type 1 <----> External Shading Information -----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) 

 Shade 1
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0

 Shade 2
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0

 Shade 3
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0

 0.0 0.0 0.0

Space Name: #357-PENTHOUSE 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
Carrier Hourly Analysis Program Page 2 of 2

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Exposu	ire	<	Type Area	: 1 Shade				ype	2			7	'ype	3	
	NE		0.0	0				NA	NA				NA	NA	
	E		40.0					NA	NA				NA	NA	
	SE		0.0						NA				NA		
	S		28.0						NA				NA		
	SW		0.0					NA					NA		
	W		56.0						NA NA				NA NA		
	NW N		0.0 56.0					NA NA	NA NA				NA NA	•	
	H		0.0					NA	NA					NA	
***** 5. INT	****	****		****	****	****	***	****	****	****	****	***	***	 ****	***
SPACE	DATA		Floor A		=	1,3	80 1	sqft	Bu	ildin	g Wt.	=	М	lb/s	gf
PEOPLE	?		sqft/pe		=	172	. 5		Tot	tal P	eople	!	=		
20122	•		Schedul				1				y Lev				;
IGHTI	NG	:	W/sqft		=	2.	09				atts				
			Schedul								Mult			1	1.0
			Fixture	Туре	=		1 1	Rece	essed	, not	vent 	ed 			
THER	ELEC	TRIC				3.			Tot	tal W	atts		=	4,	98
			Schedul	e No.	= 		3 								
usc.	SENS	BLE:	Load		=				hr s						•
usc.	LATE	T.	Load		=		0 1	BTU/	hr s	Sched	ule N	· .	=		
			*********				***	****	****	****	****	**1	***	****	***
PARTII	CIONS	(Nex	ct to Unc												
			Area		Ţ	J-Valu	e			Cool	ing		He	eatin	ng
			(sqft) 			/hr/sq									
alls			0.0								0 F				
Ceilin	ngs		0.0	)		0.100	)			90.	0 F			50.0	F
Floors	3		0.0	)		0.100					0 F			50.0	
NFILI									ROUND						
Cooli	na	. 0.0	06 CFM/BG	rft =		83	CFM	7	rea		:		(	).O E	gft
	~~	٠ ،	10 CFM/BC	·f+ =		138	CFM	F	Perime	eter	:		(	0.0 f	Et
Heati	ing		10 CFM/BC	110 -				_			-		7		

Space Name : #357-I FL WEST EXPOSURE 10-24-90 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Page 1 of 2 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #357-I FL WEST EXPOSURE 2. WALL INFORMATION (Number of Wall Types = 3) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) Wall Type 1 M M
Wall Type 2 M M
Wall Type 3 M M 0.230 0.310 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 NE 0.0 E 0.0 SE S SW W 0.0 0.0 NW 0.0 0.0 \*\*\*\*\*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) 4. GLASS INFORMATION (Number of Glass Types = 1) \_\_\_\_\_\_ U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades \_\_\_\_\_ Glass Type 1 <----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) Shade 1 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 Shade 2 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 Shade 3 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0

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Space Name : #357-I FL WEST EXPOSURE10-24-90Prepared By : ENGG APPLICATIONS CONSUL6022890201Carrier Hourly Analysis ProgramPage 2 of 2

<- Exposure	Type Area	1		reas Type a			Туре	3
NE	0.0	0		NA	NA		NA	NA
E	0.0	0		NA	NA		NA	NA
SE	0.0	0		NA			NA	
S	0.0	0		NA			NA	
SW	0.0	0		NA			NA	
W	0.0	0		NA			NA	
NW	0.0	0		NA			NA	
N H	0.0 0.0	0		NA NA			NA NA	
. INTERNAL LO	********** ADS	******	*****	****	******	*****	****	******
SPACE DATA	: Floor Ar	ea =	2,700	sqft	Buildin	ıg Wt. =	м	lb/sqft
PEOPLE	: sqft/per	son =	540.0		Total P	eople	=	5
	Schedule		_			y Level		2
IGHTING	: W/sqft	=	2.21		Total W			5,960
	Schedule	No. =	: 2			Mult.		1.00
	Fixture	Type =	: 1	Rece	essed, not	vented		
THER ELECTRIC	: W/sqft	=======================================	4.40		Total W	latts	=	11,880
	Schedule		_					
AISC. SENSIBLE	: Load		14,164	BTU/	hr Sched	ule No.	=	4
	: Load				hr Sched			4
	********* INFILTRAT	******* CION, GR		****	*****	****	****	*****
PARTITIONS (Ne	xt to Unco	ndition	ed Spaces	)	Uncond	itioned	Spac	e Temp.
	Area		<b>U-Value</b>		Cool	ing	He	eating
	(sqft)	(BI	U/hr/sqft	/F)	(deg F	or %)	(deg	F or %)
Valls	563.0		0.310		85.	0 F		55.0 F
Ceilings	0.0		0.100		90.	0 F	5	0.0 F
Floors	0.0		0.100	•	90.	O F	5	0.0 F
INFILTRATION				GR	ROUND ELEM	ENT		
Cooling : 0.	06 CFM/saf	t =	162 CF			:	2,700	0.0 saft
					Perimeter			7.0 ft
Heating : 0.	TO CLUIDOI							

10-24-90 Space Name : #357-I FL NW CORNER 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 Carrier Hourly Analysis Program 1. SPACE NAME = #357-I FL NW CORNER 2. WALL INFORMATION (Number of Wall Types = 3) \_\_\_\_\_\_\_\_ Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) \_\_\_\_\_\_ Wall Type 1 M M M M 0.310 Wall Type 2 M Wall Type 3 M 0.230 0.310 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 \_\_\_\_\_\_\_ 0.0 0.0 0.0 0.0 0.0 0.0 0.0 115.0 0.0 0.0 NE 0.0 E 0.0 SE S 0.0 SW 0.0 W 0.0 0.0 0.0 345.0 NW 0.0 \*\*\*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) \_\_\_\_\_\_\_ Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) \*\*\*\*\*\*\*\*\*\*\* 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades 0.90 0.500 Glass Type 1 <----- External Shading Information ------Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) 

 Shade 1
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 2
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Shade 3
 8.0
 4.0
 0.0
 0.0
 0.0
 0.0
 0.0

Space Name: #357-I FL NW CORNER 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
Carrier Hourly Analysis Program Page 2 of 2

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E 0.0 0 NA NA SE 0.0 0 NA NA SE 0.0 0 NA NA SW 0.0 0 NA NA W 0.0 0 NA NA NW 0.0 0 NA NA NA NA NW 0.0 0 NA NA H 0.0 0 NA NA H 0.0 0 NA NA H 0.0 0 NA NA H 0.0 0 NA NA H 0.0 0 Total People Schedule No. = 1 Activity Level =  LIGHTING : W/sqft = 2.82 Total Watts = Schedule No. = 2 Wattage Mult. = Fixture Type = 1 Recessed, not vented  OTHER ELECTRIC: W/sqft = 13.20 Total Watts = Schedule No. = 3  MISC. SENSIBLE: Load = 0 BTU/hr Schedule No. = MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC. LATENT : Load = 0 BTU/hr Schedule No. =  MISC.		3 Shade	 de
SE	NA	NA	
S	NA		
SW	NA		
W	NA		
NW 0.0 0 NA NA NA NA NA NA NA NA NA NA NA NA NA	NA		
N 0.0 0 NA NA H 0.0 0 NA NA H 0.0 0 NA NA NA NA	NA		
H 0.0 0 NA NA  SPACE DATA: Floor Area = 900 sqft Building Wt. =  PEOPLE: sqft/person = 900.0 Total People = Schedule No. = 1 Activity Level =  Schedule No. = 2 Wattage Mult. = Fixture Type = 1 Recessed, not vented  OTHER ELECTRIC: W/sqft = 13.20 Total Watts = Schedule No. = 3  AISC. SENSIBLE: Load = 0 BTU/hr Schedule No. = AISC. LATENT: Load = 0 BTU/hr Schedule No. = Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = 0 BTU/hr Schedule No. = CAISC. LATENT: Load = CAISC. LATENT: LOAD = CAISC. LATENT: LOAD = CAISC. LATENT: LOAD = CAISC. LA	NA	-	
SPACE DATA: Floor Area = 900 sqft Building Wt. =  PEOPLE: sqft/person = 900.0 Total People: Schedule No. = 1 Activity Level:  LIGHTING: W/sqft = 2.82 Total Watts: Schedule No. = 2 Wattage Mult. =  Fixture Type = 1 Recessed, not vented  OTHER ELECTRIC: W/sqft = 13.20 Total Watts: Schedule No. = 3  AISC. SENSIBLE: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. SENSIBLE: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. SENSIBLE: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. SENSIBLE: Load = 0 BTU/hr Schedule No. =  AISC. SENSIBLE: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. SENSIBLE: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. SENSIBLE: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Schedule No. =  AISC. LATENT: Load = 0 BTU/hr Sc	NA		
SPACE DATA: Floor Area = 900 sqft Building Wt. =  PEOPLE: sqft/person = 900.0 Total People = Schedule No. = 1 Activity Level =  LIGHTING: W/sqft = 2.82 Total Watts = Schedule No. = 2 Wattage Mult. = Fixture Type = 1 Recessed, not vented  OTHER ELECTRIC: W/sqft = 13.20 Total Watts = Schedule No. = 3  MISC. SENSIBLE: Load = 0 BTU/hr Schedule No. = MISC. LATENT: Load = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No.	NA	. NA	
PEOPLE : sqft/person = 900.0 Total People = Schedule No. = 1 Activity Level = LIGHTING : W/sqft = 2.82 Total Watts = Schedule No. = 2 Wattage Mult. = Fixture Type = 1 Recessed, not vented = 13.20 Total Watts = Schedule No. = 3	 M	 lb/s	~ ~ ~ -
Schedule No. = 1 Activity Level =  LIGHTING: W/sqft = 2.82 Total Watts = Schedule No. = 2 Wattage Mult. =  Fixture Type = 1 Recessed, not vented  OTHER ELECTRIC: W/sqft = 13.20 Total Watts = Schedule No. = 3  AISC. SENSIBLE: Load = 0 BTU/hr Schedule No. = 4 OBTU/hr Schedule No. = 0 BTU/hr Schedule No. = 4 OBTU/hr Schedule No. = 0 BTU/hr Sch			
Schedule No. = 1 Activity Level =  JIGHTING: W/sqft = 2.82 Total Watts = Schedule No. = 2 Wattage Mult. =  Fixture Type = 1 Recessed, not vented = 1.50 Total Watts = Schedule No. = 3  JISC. SENSIBLE: Load = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedule No. = 0 BTU/hr Schedu	=		
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Schedule No. = 3  ISC. SENSIBLE: Load = 0 BTU/hr Schedule No. =  ISC. LATENT : Load = 0 BTU/hr Schedule No. =   **********************************		11 (	
ARTITIONS (Next to Unconditioned Spaces) Area (sqft) (BTU/hr/sqft/F)	_	11,0	, -
ISC. LATENT: Load = 0 BTU/hr Schedule No. =  ***********************************			
ARTITIONS (Next to Unconditioned Spaces)  Area  (sqft)  (BTU/hr/sqft/F)  (agft)  (balls  0.0  0.310  85.0 F  Ceilings  0.0  0.100  Unconditioned Spaces)  0.0  0.100  90.0 F	=		
PARTITIONS (Next to Unconditioned Spaces) Unconditioned S Area U-Value Cooling (sqft) (BTU/hr/sqft/F) (deg F or %) (deg F			
Area U-Value Cooling (sqft) (BTU/hr/sqft/F) (deg F or %) (d  Valls 0.0 0.310 85.0 F Ceilings 0.0 0.100 90.0 F	****	****** ce Ter	 ** 
Valls 0.0 0.310 85.0 F Ceilings 0.0 0.100 90.0 F		eating	
Ceilings 0.0 0.100 90.0 F	deg	F or	r
eilings 0.0 0.100 90.0 F			
		55.0 E	
		50.0 E	
floors 0.0 0.100 90.0 F	5	50.0 E	F
NFILTRATION GROUND ELEMENT			
Cooling: 0.06 CFM/sqft = 54 CFM Area:	900	0.0 80	g c
Heating: 0.10 CFM/sqft = 90 CFM Perimeter:	71	1.0 ft	f+
Typical: 0.10 CFM/sqft = 90 CFM Depth:		1.5 ft	

10-24-90 Space Name : #357-I FL NORTH EXPOSURE 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #357-I FL NORTH EXPOSURE \*\*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 3) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) Wall Type 1 M M M M 0.310 Wall Type 2 M 0.230 m Wall Type 3 0.310 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 ------0.0 0.0 NE 0.0 0.0 E 0.0 0.0 SE 0.0 0.0 0.0 S 0.0 0.0 SW 0.0 0.0 W 0.0 0.0 NW 0.0 748.0 \*\*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) \_\_\_\_\_\_ Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) 0.110 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades 0.500 0.90 Glass Type 1 \_\_\_\_\_ ----- External Shading Information ------Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) Shade 1 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 Shade 2 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 Shade 3 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0

Space Name: #357-I FL NORTH EXPOSURE 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
Carrier Hourly Analysis Program Page 2 of 2

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4.	GLASS	INFORMATION	(continued)

	<				Glass	Ar	 eas	(sqft)				>
_		Туре			_		ype				Type	
Exposure		Area	Snade	2 		Area		Snade		A:	rea 	Shade
NE		0.0	0				NA	NA			NA	NA
E		0.0	0				NA	NA			NA	
SE		0.0	0				NA				NA	
S		0.0	0				NA				NA	
SW		0.0	0					NA NA			NA NA	
W NW		0.0	0					NA NA			NA NA	
N		0.0	Ö				NA				NA	
H		0.0	-				NA				NA	NA
*****					*****		****	*****	***	 ****	*****	 *******
5. INTERNAL												
SPACE DATA	:	Floor A	cea	=	1,2	233	sqft	. Buil	din	Wt.	= M	lb/sqft
PEOPLE	:	sqft/per	cson	=	411	1.0		Tota	ıl Pe	ople	=	3
		Schedule	e No.	=					.vit	/ Lev	el =	2
LIGHTING	:	W/sqft		=	2.	.85		Tota	ıl Wa	atts	=	3,520
		Schedule	e No.	=		2		Watt	age	Mult	. =	1.00
l		Fixture	туре	=		1	Rece	essed,	not	vent	eg 	
OTHER ELECTI	RIC:					67		Tota	ıl Wa	atts	=	2,060
		Schedule	e No.	=		3						
MISC. SENSIE	BLE:	Load		=	18,5	570	BTU	hr Sc	hedi	ıle N	o. =	4
MISC. LATENT								hr Sc				4
******												
6. PARTITION							***					
PARTITIONS (	(Next	t to Unco	ondit									
		Area			J-Valu					Lng		eating
		(sqft)		(BTU/	hr/sq	]ft/	F) 	(deg	, F (	or %)	(deg	F or %)
Walls		0.0			0.310	)			85.0	F	!	55.0 F
Ceilings		0.0			0.100	)				F		50.0 F
Floors		0.0			0.100	)			90.0	) F	!	50.0 F
INFILTRATION	v V						GI	ROUND E				
Cooling :		6 CFM/sq	ft =		74	CFM	2	Area				3.0 sqft
Heating :	0.10	CFM/sq	ft =					Perimet	er	:	6	
Typical :	0.10	O CFM/sq:	ft =		123	CFM	I	epth		:	1:	1.5 ft
*****	****	*****	****	****	****	***	***	*****	***	****	*****	*****

Cosco Nar	<del>-</del>	-T RI NR	CODNED					0-24-90
	me : #357-						_	
	By : ENG			ONSUL				2890201
Carrier F	Hourly Ana	alysis P	rogram	*****				1 of 2
1. SPACE	NAME	= #357	-I FL NE	CORNER				
				**************************************		****	*****	****
		w	eight	Ext Co		U-V		
		(1b	/sqft)	(D,M,	L) 	(BTU/hr	/sqft/F	') 
	l Type 1		M	М			310	
	l Type 2		М	М			230	
Wal:	l Type 3		M	M		0	310 	
				t Wall Are				
	Exposure	Wall	Type 1	Wall Ty	pe 2 	Wall Typ	e 3 	
	NE		0.0	_	0.0		0.0	
	E		0.0		99.0		0.0	
	SE		0.0		0.0		0.0	
	S		0.0		0.0		0.0	
	SW		0.0		0.0		0.0	
	W		0.0		0.0		0.0	
	W NW N		0.0	3 ******	0.0 10.0 *****		0.0 0.0	*****
	W NW N ********	ON (Numb	0.0 0.0 ******** er of Ro	3 ******* of Types = or (BT	0.0 10.0 ******* 1) U-Value U/hr/sqf	******* : :	0.0 0.0 ****** Area	
	W NW N ********************************	ON (Numb	0.0 0.0 ******** er of Ro	3 ******* of Types = or (BT	0.0 10.0 ******* 1) U-Value	******* et/F)	0.0 0.0 ******* Area (sqft	
3. ROOF :	Weigl (lb/sq:	ON (Numb	0.0 0.0 ******** er of Ro Ext Col (D,M,L	3 ******** of Types = or ) (BT  ********* lass Types	0.0 10.0 ******* 1) U-Value U/hr/sqf	******* t/F) ******	0.0 0.0 ******* Area (sqft	0.0
3. ROOF :	Weigl (lb/sq:	ON (Numb	0.0 0.0 ******** er of Ro Ext Col (D,M,L M M *******	3 ******** of Types = or ) (BT  ******** class Types clue sqft/F)	0.0 10.0 ******* 1) U-Value U/hr/sqf 0.110 ******	******* t/F) *******	0.0 0.0 ******* Area (sqft	0.0
3. ROOF :	Weigh (lb/sq: Meigh (lb/sq: M	ON (Numb	0.0 0.0 ******** er of Ro Ext Col (D,M,L 	3 ******** of Types = or ) (BT  ******** class Types clue sqft/F)	0.0 10.0 ******** 1) U-Value U/hr/sqf 0.110 ******* = 1) Glas	********  st/F)  ********	0.0 0.0 ******* Area (sqft	0.0
3. ROOF :	Weigh (lb/sq: Mass Type	ON (Numb	0.0 0.0 ******** er of Ro Ext Col (D,M,L 	3 ******* of Types =  or ) (BT  ******** class Types clue sqft/F)	0.0 10.0  *******  1)  U-Value U/hr/sqf  0.110  ******  = 1)  Glass Facto  0.9	********  it/F)  *******  is I	O.O O.O ******* Area (sqft ****** nternal Shades N	0.0
3. ROOF :	Weight (lb/sq: M************************************	ON (Numb	0.0 0.0 ******** er of Ro Ext Col (D,M,L 	3 ******* of Types = or ) (BT  ******** class Types clue sqft/F) oo al Shading	0.0 10.0  *******  1)  U-Value U/hr/sqf  0.110  ******  = 1)  Glass Facto  0.9  Informa Overha	********  it/F)  *******  is I	0.0 0.0 ******* Area (sqft *******	0.0 ******
3. ROOF :	Weight  NWeight  NWeight  NWeight	ON (Numbers)  Attitude  At	0.0 0.0 ******** er of Ro Ext Col (D,M,L 	3 ******* of Types = or ) (BT	0.0 10.0  *******  1)  U-Value U/hr/sqf  0.110  *******  = 1)  Glas Facto  0.9  Informa Overha Extensi	********  it/F)  *******  is I	O.O O.O ******* Area (sqft ****** nternal Shades N	0.0 ***** 
3. ROOF :	Weight  NWeight  NWeight  NWeight	ON (Numbers)  At the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the fet of the f	0.0 0.0 0.0 ******* er of Ro Ext Col (D,M,L  M  ******* ber of G U-Va (BTU/hr/  0.5 - Extern Reveal Depth (in)	3 ******* of Types = or ) (BT  ******** lass Types lue sqft/F)  00  al Shading Overhang Height (in)	0.0 10.0  *******  1)  U-Value U/hr/sqf  0.110  *******  = 1)  Glas Facto  0.9  Informa Overha Extensi (i	********  it/F)  *******  or  oution  ing  on Sepa	0.0 0.0 ****** Area (sqft ******  nternal Shades N Fin ration	0.0  *****  Fit Exten (in
3. ROOF :	W NW NW N N N N N N N N N N N N N N N N	ON (Numbers)  ******* ION (Num  Window Width (ft)	0.0 0.0 0.0 ******* er of Ro Ext Col (D,M,L  M  ******* ber of G U-Va (BTU/hr/  0.5 - Extern Reveal Depth (in)	3 ******* of Types = or ) (BT  ******** lass Types lue sqft/F)  00  al Shading Overhang Height (in)	0.0 10.0  *******  1)  U-Value U/hr/sqf  0.110  *******  = 1)  Glas Facto  0.9  Informa Overha Extensi (i	t/F)  *******  ss I  or  dion  ing  on Sepa.  n)	0.0 0.0 	0.0  *****  Fin  Exten  (in)

Space Name: #357-I FL NE CORNER 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
Carrier Hourly Analysis Program Page 2 of 2

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# 4. GLASS INFORMATION (continued)

	<					Glass 1		_	t)			>
			Туре				Type		_		Type	
Exposu	re		Area	Shad 	e 	Are	ea 	Snad	e 	Are	:a 	Shade 
	NE		0.0	0			NA	NA			NA	NA
	E		32.0	0			NA	NA			NA	NA
	SE		0.0	0			NA	NA			NA	NA
	S		0.0	0			NA	NA			NA	NA
	SW		0.0	0			NA				NA	
	W		0.0	0			NA				NA	
	NW		0.0	0			NA				NA	
	N H		0.0	0			NA NA				NA NA	
 ****** 5. INT	******		 **************		****	*****	****	****	*****	*****	****	*****
SPACE	DATA	 :	Floor A	ea	=	740	sqf	t Bu	ilding	y Wt. =	 М	lb/sqf
PEOPLE	}	:	sqft/per	cson	=	123.3	3	To	tal Pe	eople	=	
			Schedule		=		l			, Level		
LIGHTI	.NG	:				2.16	) )					1,60 1.0
			Schedule Fixture									1.0
			rixture							venceu		
OTHER	ELECTRI	C:	W/sqft		=	5.6						4,15
			Schedule				3					
	SENSIBL			•	=					ile No.		
MISC.	LATENT	:	Load		<b>=</b>		) BTU	/hr a	Schedu	le No.	=	
			********				****	****	*****	****	****	*****
PARTIT	CIONS (N	ext	to Unco	ondit	ioned	Spaces	3)	U	ncondi	tioned	Spac	ce Temp
			Area		U	-Value			Cooli	ing	He	eating
		(	(sqft)		(BTU/	hr/sqft	:/F)	(de	eg F c	or %)	(deg	F or %
 Walls	<b></b>		0.0			0.310			85.0	) F		55.0 F
wallb Ceilin	nas		0.0			0.100			90.0			50.0 F
Floors	_		0.0			0.100			90.0			50.0 F
	RATION	04	CEW/ce	F+ -		44 CI		ROUND <b>Area</b>	ELEME	:	711	0.0 sqf
			CFM/sqi			74 CI		area Perime	eter	•		7.0 ft
Typic	_		CFM/sqi			74 CI		Depth		:		1.5 ft
-12-	• •		/							-	-	

Space Nam								
			ST EXPOS				10-3	
	By : ENGO			ONSUL			602289	
Carrier E	Hourly Ana	TIABIE L	rogram			******	Page 1	
1. SPACE	NAME	= #357	-I FL EA	ST EXPOSUR	E			
				********** ll Types =		****	****	****
		 W	eight	Ext Co	lor	U-Valu	 e	
			-	(D,M,		(BTU/hr/sq	ft/F)	
	l Type 1		M	М		0.310		
	l Type 2		M	M		0.230		
Wall	l Type 3		M	M		0.310		
						)>		
	Exposure	Wall	Type 1	Wall Ty	pe 2	Wall Type 3		
	NE		0.0		0.0	0.0		
	E		0.0		82.0	0.0		
	SE		0.0		0.0	0.0		
	S		0.0		0.0 0.0	0.0		
	SW		0.0		0.0	0.0		
	T.7					0.0		
	W NW							
	NW N		0.0	 ******	0.0	0.0 0.0 		 ****
	NW N	ON (Numb	0.0 0.0 ******** er of Ro		0.0 0.0 ******** 1) U-Value U/hr/sqff	0.0 0.0 *********		 ****
3. ROOF 1	NW N **********************************	ON (Numb	0.0 0.0 ******** er of Ro	 ********* of Types = 	0.0 0.0 ********* 1) U-Value	0.0 0.0 *********	 ***** 	
3. ROOF 1	NW N **********************************	ON (Numb	0.0 0.0 ******** er of Ro Ext Col (D,M,L	 ********* of Types = 	0.0 0.0 *******************************	0.0 0.0 *********	****** Area sqft)	
3. ROOF 1	NW N **********************************	ON (Numb	0.0 0.0 ******** er of Ro Ext Col (D,M,L	*********  of Types =  or ) (BT  ******** lass Types	0.0 0.0 *******************************	0.0 0.0 ************ t/F) (	****** Area sqft) 0.(	
3. ROOF 1 ROOf 1 ********	NW N **********************************	ON (Numb	0.0 0.0 ******** er of Ro Ext Col (D,M,L M ********	*********  of Types =  or ) (BT  ********  lass Types  lue sqft/F)	0.0 0.0 ********** 1) U-Value U/hr/sqff 0.110 ******** = 1)	0.0 0.0 ************ t/F) ( ************************************	****** Area sqft) 0.(	
Roof 1	NW N ********* INFORMATIO  Weigh (lb/sqi	ON (Numb	0.0 0.0 ******** er of Ro Ext Col (D,M,L M ******** aber of G U-Va (BTU/hr/	*********  of Types =  or ) (BT   ********* lass Types  lue sqft/F)  al Shading	0.0 0.0 ******************************	0.0 0.0 *******************************	****** Area sqft) O.( ****** rnal des	****
Roof 1	NW N ********* INFORMATIO  Weigh (lb/sqi	ON (Numb	0.0 0.0 ******* er of Ro Ext Col (D,M,L  M ******* ber of G U-Va (BTU/hr/ 0.5	*********  of Types =  or ) (BT   ********* lass Types  lue sqft/F)  00  al Shading Overhang	0.0 0.0 ******************************	0.0 0.0 *******************************	*****  Area sqft)  O.(  ******  rnal des  N	****
Roof 1	NW N N N N N N N N N N N N N N N N N N	ON (Numbers)  Attitude  At	0.0 0.0 0.0 ******* er of Ro Ext Col (D,M,L  M ****** aber of G U-Va (BTU/hr/  0.5 - Extern Reveal Depth	********  of Types =  or ) (BT   ******** lass Types  lue sqft/F)  00  al Shading Overhang Height	0.0 0.0 *********  1)  U-Value U/hr/sqf(  0.110  *******  = 1)  Glass Factor  0.90  Informat Overhan Extension	0.0 0.0 *******************************	***** Area sqft)  0.0  *****  rnal des  N  Fin ion E:	
Roof 1	NW N N N N N N N N N N N N N N N N N N	ON (Numb	0.0 0.0 ******* er of Ro Ext Col (D,M,L  M ******* ber of G U-Va (BTU/hr/ 0.5	*********  of Types =  or ) (BT   ********* lass Types  lue sqft/F)  00  al Shading Overhang	0.0 0.0 ******************************	0.0 0.0 *******************************	*****  Area sqft)  O.(  ******  rnal des  N	
Roof 1 ******* 4. GLASS	NW N N N N N N N N N N N N N N N N N N	ON (Numbers)  Attitude  At	0.0 0.0 0.0 ******* er of Ro Ext Col (D,M,L  M ****** aber of G U-Va (BTU/hr/  0.5 - Extern Reveal Depth	********  of Types =  or ) (BT   ******** lass Types  lue sqft/F)  00  al Shading Overhang Height	0.0 0.0 ********* 1) U-Value U/hr/sqff 0.110 ******* = 1) Glass Factor 0.90 Information overhamic coverhamic c	0.0 0.0 *******************************	***** Area sqft)  0.0  *****  rnal des  N  Fin ion E:	
3. ROOF 1 ROOf 1 ********	NW N  ******** INFORMATION  Weight (1b/sqf  M  ********  INFORMATION  lass Type  Vindow  Height (ft)	ON (Numbers)  Attitude of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the contro	0.0 0.0 0.0 ******* er of Ro Ext Col (D,M,L  M  ****** ber of G U-Va (BTU/hr/  0.5	********  of Types =  or ) (BT  ******* lass Types  lue sqft/F)  00  al Shading Overhang Height (in)	0.0 0.0 ********* 1) U-Value U/hr/sqff 0.110 ******* = 1) Glass Factor 0.90 Information (in	0.0 0.0 *******************************	****** Area sqft)  0.0  ******  rnal des  N  Fin ion E: in)	****

Space Name: #357-I FL EAST EXPOSURE 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
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4. GLMSS 1		ATION (co												
Exposure		Type Area	1			Ty	pe 2	(sqft) 2 Shade			•	Type	3	
NE		0.0					NA	NA				NA	NA	
E		328.0						NA				NA		
SE S		0.0	0				NA NA					NA NA		
SW SW		0.0	0				NA NA					NA NA		
W		0.0	Ö				NA					NA		
NW		0.0					NA	NA				NA		
N		0.0	0				NA	NA				NA	NA	
H		0.0	0			1	NA	NA				NA	NA	
********** 5. INTERNAL			*****	***	*****	****	***	*****	***	****	***	****	***	***
SPACE DATA		Floor A		=	1,4		_		•	Wt.			1b/	-
PEOPLE	:		rson e No.	=	121	.8		Tota	l Pe	eople / Lev	e vel	=		12
LIGHTING				=	2.	74 2		Tota	ıl Wa	atts		=	4	,000
OTHER ELEC	TRIC:			=		 73								
MISC. SENS: MISC. LATE		Load Load		=	13,1	40 B'	ru/h ru/h	nr So nr So	hedu hedu	ile i	10. 10.	=		4
*********** 6. PARTITIO					JND									
PARTITIONS		t to Unco Area (sqft)		τ		es) e		C	ond:	ition ing	ned	Spac	e Te	emp. ng
Walls		0.0			0.310				85.0	) F			5.0	F
Ceilings Floors		0.0			0.100 0.100					F		5	0.0	F
INFILTRATIO	 ОИ						GRO	UND E	LEME	 ENT				
Cooling		6 CFM/sqf	ft =		88	CFM		ea		:	:	1,462	.0 E	sqft
		O CFM/sqt			146	CFM	₽e	rimet	er	:		52		
Typical													5 1	

10-24-90 Space Name : #357-I FL SOUTH EXPOSURE 6022890201 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #357-I FL SOUTH EXPOSURE \*\*\*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 3) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) м Wall Type 1 M
Wall Type 2 M
Wall Type 3 M M M 0.230 0.310 \_\_\_\_\_\_ <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 \_\_\_\_\_\_ 0.0 0.0 0.0 196.0 0.0 0.0 NE E 0.0 0.0 SE 0.0 0.0 S 0.0 0.0 SW 0.0 0.0 W 0.0 0.0 0.0 NW 0.0 \*\*\*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) \_\_\_\_\_\_ Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) 0.110 Roof 1 \*\*\*\*\*\*\*\*\*\*\*\*\* 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades 0.500 0.90 Glass Type 1 <----> External Shading Information -----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten.
(ft) (ft) (in) (in) (in) (in) \_\_\_\_\_\_ Shade 1 8.0 4.0 0.0 0.0 0.0 Shade 2 8.0 4.0 0.0 0.0 0.0 Shade 3 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

Space Name : #357-I FL SOUTH EXPOSURE 10-24-90 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Page 2 of 2 Carrier Hourly Analysis Program

Exposure		Type	1 85 - 4-		•	T <sub>.</sub>	ype	2 Sha	a_			R a	Туре	3	
exposure		ea 		: 	A: 	rea 		Snac	1e 			are		5na	.ae
NE		0.0	0				NA	NA					NA	N.	A.
E		80.0	0				NA						NA		
SE		0.0	0				NA						NA		
S		0.0	0				NA	NA					NA		
SW W		0.0	0				NA NA						NA NA		
, W		0.0	0				NA						NA		_
N		0.0	Ö				NA						NA		
H		0.0	ō					NA						N?	
**************************************	OADS														
SPACE DATA		or Ar													
PEOPLE	: 801	ft/per	son	=	96	.0		T	otal	Pe	opl	 e	=		
PEOPLE	Sch	nedule	No.	=		1		A	ctiv	ity	Le	vel	=		;
GHTING	: W/s			=	5.	00		T	otal	Wa	itts		=	1	1,44
	Scl	nedule	No.	=		2		W	atta	ge	Mul	t.	=		1.0
,	Fiz	cture	Type	=		1	Rece								
	C. W/				8	 65							· =		
OTHER ELECTRI	Scl	nedule	No.	=		3		•							
MISC. SENSIBL	E: Lo	 ad		=	1,4	50 :	 BTU/	hr	Sch	edu	ıle	No.	=		
MISC. LATENT	: Lo	ad		=		0 :	BTU/	hr	Sch	edu	le:	No.	=		
******	****	****	****	***	****										
6. PARTITIONS	, INF.	LTRAT	10N,	GROU											
PARTITIONS (N	ext to	Unco	nditi	oned.	Space	es)		1	Jnco	ndi	.tio	ned	Spac	ce 1	Cemp
	Are	ea		U.	-Valu	e			Co	011	.ng		He	eati	ing
	(sq:	ft)	(	BTU/	hr/sq	ft/	F)	(	leg 	Fc	er &	) 	(deg	FC	or %
valls		0.0			0.310				8	5.0	) F		!	55.0	) F
Ceilings		0.0		(	0.100				9	0.0	F		!	50.0	F
Floors		0.0			0.100						) F		!	50.0	
INFILTRATION								OUN							
	.06 C	M/sqf			17	CFM	A	rea			:		28	3.0	sqf
Cooling : 0													_		~ -
Heating : 0 Typical : 0	.10 C	M/sqf	t =		29 29								24	4.0	It

Space Name : #357-I FL SW CORNER 10-24-90 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Carrier Hourly Analysis Program Page 1 of 2 \*\*\*\*\*\*\*\*\*\*\*\* 1. SPACE NAME = #357-I FL SW CORNER \*\*\*\*\*\*\*\*\*\* 2. WALL INFORMATION (Number of Wall Types = 3) Weight Ext Color U-Value (lb/sqft) (D,M,L) (BTU/hr/sqft/F) \_\_\_\_\_ Wall Type 1 M M
Wall Type 2 M M
Wall Type 3 M M 0.230 0.310 <----> Net Wall Areas (sqft) ----> Exposure Wall Type 1 Wall Type 2 Wall Type 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 146.0 NE 0.0 E 0.0 SE S 0.0 0.0 0.0 0.0 SW 0.0 0.0 138.0 W 0.0 0.0 0.0 NW 0.0 0.0 \*\*\*\*\*\*\*\*\*\*\*\* 3. ROOF INFORMATION (Number of Roof Types = 1) Weight Ext Color U-Value Area (lb/sqft) (D,M,L) (BTU/hr/sqft/F) (sqft) 4. GLASS INFORMATION (Number of Glass Types = 1) U-Value Glass Internal (BTU/hr/sqft/F) Factor Shades 0.500 0.90 N Glass Type 1 <---->
External Shading Information -----> Window Window Reveal Overhang Overhang Fin Fin Height Width Depth Height Extension Separation Exten. (ft) (ft) (in) (in) (in) (in) Shade 1 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 Shade 2 8.0 4.0 0.0 0.0 0.0 0.0 0.0 Shade 3 8.0 4.0 0.0 0.0 0.0 0.0 0.0 0.0

Space Name: #357-I FL SW CORNER 10-24-90
Prepared By: ENGG APPLICATIONS CONSUL 6022890201
Carrier Hourly Analysis Program Page 2 of 2

4.	GLASS	INFORMATION	(continued)	ì
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Exposure		Type Area	1		Glass A	T	eas 'ype	2				:	Type		> ade
NE		0.0	0				NA	NA	•				NA	N	A
E		0.0	0				NA	NA	•				NA	N	-
SE		0.0	0				NA	-					NA		
S		32.0	0					NA					NA		
SW		0.0	0					NA					NA		
W		0.0	0					NA					NA		-
NW		0.0	0					NA					NA		-
N H		0.0 0.0	0				NA NA						NA NA		
**************************************	* * : OAI	********* OS	****	****	****	***	****	 ***	***	***	****	**	****	·	****
SPACE DATA	:	Floor A	rea	=	1	86	sqft		uild	ing	Wt.	. =	М	1b	/sqft
PEOPLE	:	sqft/per Schedule			186	1			otal ctiv						:
LIGHTING		W/sqft		=	2.	58		т	otal	Wat	tts		=		480
DIGHTING	•	Schedule		=		2			atta						1.00
		Fixture		=		1	Rece		d, n	_					
OTHER ELECTRI	C:	W/sqft Schedule	e No.	=	10.	00 3		T	otal	Wa	tts		=		1,860
MISC. SENSIBL MISC. LATENT		Load Load		=					Sch						
************* 6. PARTITIONS	**	INFILTRA	**** TION,	#### GROU	***** ND	***	****	***	****	***	***	***	****	***	****
PARTITIONS (N		Area		U	-Valu	e			Cod	oli	ng		H	eat:	ing
		(sqft)		(BTU/	hr/sq	ft/	F)	(	deg 1	F o	r %)		(deg	F	or %)
Walls		0.0			0.310	_ <b></b>			8	5.0	F			55.	) F
Ceilings		0.0			0.100				9	0.0	F		!	50.	O F
Floors		0.0			0.100				90	0.0	F			50.	
INFILTRATION			<del></del>					ROUN	D EL						
Cooling : 0															sqft
										٣	•		28	3.0	ft
Heating : 0 Typical : 0									h					0.0	

Prepared	me : #357 By : ENGO Hourly And *******	G APPLIC	CATIONS CO		****		10-24-90 6022890201 age 1 of 2
1. SPACE	NAME	= #357	-I FL IN	TERIOR			
2. WALL	INFORMATIO	ON (Numb	er of Wa	********** ll Types =		*****	*****
				Ext Co	lor	U-Value	
		(1b	o/sqft)	(D,M,I		(BTU/hr/sqft	/F)
Wal	l Type 1		м	М		0.310	
	1 Type 2		M	M		0.230	
Wal	l Type 3		M 	М		0.310	
						>	
	Exposure	Wall	Type 1	Wall Typ	pe 2 V	Vall Type 3	
	NE		0.0		0.0	0.0	
	E		0.0		0.0	0.0	
	SE		0.0		0.0	0.0	
	S		0.0		0.0	0.0	
	SW		0.0		0.0	0.0	
	W		0.0		0.0	0.0	
	NW N		0.0 0.0		0.0	0.0 0.0	
3. ROOF		 nt	Ext Col	of Types = or (BTU	U-Value	Ar :/F) (sq	
				, (==-			
Roof 1	м		м		0.110		0.0
******	*****	*****	M ******		0.110		0.0
******	*****	*****	M ******* uber of G	**************************************	0.110 ********* = 1)	******	0.0 ******
******* 4. GLASS	*****	**************************************	M ******* uber of G	**************************************	0.110 ********* = 1)	i Intern	0.0 ******
******* 4. GLASS	********* INFORMAT	**************************************	M www.wher of G U-Va (BTU/hr/s	*********** lass Types lue sqft/F)	0.110  *******  = 1)  Glass Factor  0.90	Intern Shade	0.0 *******
******* 4. GLASS	information in the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the	******* ION (Num	M  ******  U-Val  (BTU/hr/s  0.50  - Externa  Reveal	************ lass Types lue sqft/F) 00 al Shading Overhang	0.110  ******* = 1)  Glass Factor  0.90  Informat Overhar	Intern Shade	0.0  ********  al s n Fin
******* 4. GLASS	INFORMAT: lass Type < Window Height	******* ION (Num  1  Window Width	M  ******  U-Val  (BTU/hr/s  0.50  - Externa  Reveal  Depth	*********** lass Types lue sqft/F) 00 al Shading Overhang Height	0.110  Glass Factor  0.90  Informat Overhar Extension	Intern Shade N Sion on Separatio	0.0  ********  al s> n Fin n Exten.
******* 4. GLASS	lass Type  < Window Height (ft)	Vindow Width (ft)	M  U-Val (BTU/hr/s  0.50  Externa Reveal Depth (in)	*********** lass Types lue sqft/F) 00 al Shading Overhang Height (in)	0.110  *******  = 1)  Glass Factor  0.90  Informat Overhar Extension	Intern Shade  Note on Separation (in	0.0  ********  al s> n Fin n Exten. ) (in)
******* 4. GLASS	lass Type  < Window Height (ft)	1 Window Width (ft)	M  U-Val (BTU/hr/s  0.50  Externa Reveal Depth (in)	*********** lass Types lue sqft/F) 00 al Shading Overhang Height (in)	0.110  Glass Factor  0.90  Informat Overhar Extension	Intern Shade  Note on Separation (in	0.0  ********  al  s   n Fin  n Exten. ) (in)
******* 4. GLASS	lass Type  < Window Height (ft)	Window Width (ft)	M  We with the second of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian	************ lass Types lue sqft/F) 00 al Shading Overhang Height (in)	0.110  Glass Factor  0.90  Informat Overhar Extension (ir	Intern Shade  Notion  ig Fin Separation (in 10) (in 10)	0.0  ********  al s n Fin n Exten. ) (in) 0 0.0
******* 4. GLASS	lass Type  < Window Height (ft)	1 Window Width (ft)	M  We with the second of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian Control of Gillian	************ lass Types lue sqft/F) 00 al Shading Overhang Height (in)	0.110  Glass Factor  0.90  Informat Overhar Extension	Intern Shade  Notion  ng Fi on Separation  (in 0 0.0	0.0  ********  al s n Fin n Exten. ) (in) 0 0.0 0 0.0

10-24-90 Space Name : #357-I FL INTERIOR Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Page 2 of 2

Carrier Hourly Analysis Program

<				Glass A	reas	(sqft)			>
Exposure	Type	1	_		Type	2		Type	3 Shada
	Area 			AIE	:a 	Snade	A 	rea 	Snade
NE	0.0				NA	NA			NA
E	0.0	0			NA	NA		NA	NA
SE	0.0	0			NA			NA	•
S	0.0	0			NA			NA	
SW	0.0	0			NA NA			NA NA	
W NW	0.0	0				NA NA		NA NA	
N	0.0	Ö			•	NA		NA	
H	0.0				-	NA			NA
**************************************	os 				w				
SPACE DATA :			=	7,541	sqf1	t Buil	ding Wt.	= M	lb/sqft 
PEOPLE :	sqft/per	son	=	418.9		Tota	l People	=	18
	Schedule	e No.	=	1		Acti	vity Lev	el =	2
LIGHTING :							l Watts		
DIGHTING .	Schedule	No.	=	2		Watt	age Mult	. =	1.00
	Fixture	Type	=	1	Rece	essed,	not vent	ed	
OTHER ELECTRIC:	W/sqft Schedule		=				l Watts		
MISC. SENSIBLE: MISC. LATENT :	Load Load		=	15,190 0	BTU,	/hr Sc /hr Sc	hedule N	o. = o. =	4
**************************************	******	****	****	****** ND	****	*****		*****	
PARTITIONS (Next	Area		ט	-Value		C	condition cooling For %)	He	eating
Walls	840.0			 0.310			80.0 F		53.0 F
Walls Ceilings	385.0			0.310			95.0 F		50.0 F
Floors	0.0			0.100			90.0 F		50.0 F
THEIR PROTON						ROUND E	T.EMENT		
INFILTRATION Cooling: 0.00	CRM/ext	F+ =		452 CF					0.0 sqft
Heating : 0.10	CFM/sq:	 ft =		754 CF	M I	Perimet	er :	_	0.0 ft
Typical: 0.10									0.0 ft
<del></del>	• •								

Jarrier F	By : ENGO	G APPLIC	rogram			6022 <b>Pa</b> ge	0-24-90 2890201 1 of 2
1. SPACE	NAME	= #357	-I FL CO	RRIDORS		******	
	******** INFORMATIO			********** .ll Types =		******	*****
		 W	 eight	Ext Col	 or	U-Value	
			_	(D,M,L	) (E	BTU/hr/sqft/F	) 
	l Type 1		М	M		0.310	
	l Type 2 l Type 3		M M	M M		0.230 0.310	
						0.310	
	Exposure			t Wall Area Wall Typ		> ll Type 3	
	NE		0.0		0.0	0.0	
	E		0.0		0.0	0.0	
	SE		0.0		0.0	0.0 0.0	
	S SW		0.0 0.0		0.0	0.0	
	SW W		0.0		0.0	0.0	
					0.0	0.0	
	NW		0.0				
******	NW N 		0.0 0.0 *****		0.0	0.0	*****
**************************************	N ********* INFORMATIO	ON (Numb	0.0	************ of Types =	0.0	**************************************	
**************************************	N ******** INFORMATIO Weigh	ON (Numb	0.0  ****** er of Ro  Ext Col	************ of Types =	0.0 ************ 1) U-Value	Area (sqft	
Roof 1	Weigh (1b/sq	ON (Numb	0.0 ******* er of Ro Ext Col (D,M,L	********** of Types = or ) (BTU	0.0  *********  1)  U-Value /hr/sqft/F  0.110  *********	Area (sqft	) 0.0
Roof 1	Weigh (1b/sq	ON (Numb	0.0  ****** er of Ro  Ext Col (D,M,L  M  ******* ber of G	********** of Types = or .) (BTU	0.0  *********  1)  U-Value /hr/sqft/F  0.110  *********  = 1)	Area (sqft	) 0.0
Roof 1  ********* 4. GLASS	Weigh (1b/sq	ON (Numb	0.0  ****** er of Ro  Ext Col (D,M,L  M  ****** ber of G  U-Va (BTU/hr/	********  of Types =  or  i) (BTU	0.0  ********  1)  U-Value /hr/sqft/F  0.110  ********  Glass Factor  0.90	Area (sqft  ***********************************	)  0.0 ******
Roof 1  ********* 4. GLASS	Weight (1b/sq:	ON (Numb	0.0  ****** er of Ro  Ext Col (D,M,L  M  ****** ber of G  U-Va (BTU/hr/  0.5	********  of Types =  or  ) (BTU  *********  class Types  lue  sqft/F)  oo	0.0  ********  1)  U-Value /hr/sqft/F  0.110  ********  = 1)  Glass Factor  0.90  Informatic	Area (sqft)  Internal Shades	) 0.0 *****
Roof 1  ********* 4. GLASS	Weigh (1b/sqi	ON (Numb	0.0  ****** er of Ro  Ext Col (D,M,L  M  ****** ber of G  U-Va (BTU/hr/  0.5  Extern Reveal	********  of Types =  or  ) (BTU  *********  class Types  lue sqft/F)  coo  al Shading Overhang	0.0  *********  1)  U-Value /hr/sqft/F  0.110  ********  = 1)  Glass Factor  0.90  Informatic Overhang	Area (sqft)  Internal Shades  N	)  ****** > Fin
Roof 1  ********* 4. GLASS	Weight (ft)	ON (Numb	0.0  ****** er of Ro  Ext Col (D,M,L  M  ****** ber of G  U-Va (BTU/hr/  0.5  Extern Reveal Depth (in)	********  of Types =  or  ) (BTU  ********  lass Types  lue  sqft/F)  oo  al Shading  Overhang  Height  (in)	0.0  *********  1)  U-Value /hr/sqft/F  0.110  ********  Glass Factor  0.90  Informatic Overhang Extension (in)	Area (sqft)  Internal Shades  N  Separation (in)	) 0.0 ****** Fin Exten. (in)
Roof 1 ******** 4. GLASS	Weight (ft)	ON (Numbers)  ****** ION (Numbers)  Window Window (ft)	0.0  ****** er of Ro  Ext Col (D,M,L  M  ****** ber of G  U-Va (BTU/hr/  0.5  Extern Reveal Depth (in)	********  of Types =  or  ) (BTU  ********  lass Types  lue  sqft/F)  oo  al Shading  Overhang  Height  (in)	0.0  *********  1)  U-Value /hr/sqft/F  0.110  ********  Glass Factor  0.90  Informatic Overhang Extension (in)	Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area (sqft)  Area	) 0.0 ****** Fin Exten. (in)
Roof 1  ********  4. GLASS  GJ  Shade 1	Weight (ft)	Numbers (Numbers (Num	0.0  ****** er of Ro  Ext Col (D,M,L  M  ****** ber of G  U-Va (BTU/hr/  0.5  Extern Reveal Depth (in)	********  of Types =  or  i) (BTU  *********  class Types  lue sqft/F)  oo  al Shading Overhang Height (in)  oo  oo	0.0  *********  1)  U-Value /hr/sqft/F   0.110  ********  ***  Glass Factor  0.90  Informatic Overhang Extension (in)  0.0	Area (sqft)  Internal Shades  N  Separation (in)	) 0.0 ****** Fin Exten. (in)

Space Name : #357-I FL CORRIDORS 10-24-90 Prepared By : ENGG APPLICATIONS CONSUL 6022890201 Page 2 of 2

Carrier Hourly Analysis Program

# 4. GLASS INFORMATION (continued)

<				Glass	Are	as	(sqf	t)				>
Exposure	Type	1		_	Ty	pe :	2		_	Type	3	
Exposure	Area 	Shade	) 	A 	rea 		Shad	e 	Are	:a 	Sna	ae
	0.0									NA	NA	
E	12.0	0			;	NA	NA			NA	NA	<b>L</b>
SE	0.0	0			:	NA	NA			NA	NA	
S	0.0	0				NA				NA	NA	
SW	0.0	0				NA				NA	NA	
W	0.0	0				NA				NA		
NW	0.0					NA	_			NA		
N	0.0					NA Na	NA NA			NA NA	NA NA	
H	···					nn 						· 
**************************************		*****							*****			
SPACE DATA :		rea								M	1b/	
PEOPLE :	saft/per	cson	=	0	.0		To	tal F	People			
	Schedule	∍ No.	=	_	1		Ac	tivit	y Level	=		2
LIGHTING :												
	Schedule	e No.	=		2		Wa	ttage	Mult.	=		1.00
	Fixture					ece	ssed	, not	: vented			
									 /a++c			
OTHER ELECTRIC:	Schedule	NO.	=	0.	3		10	car v	accs	_		•
MISC. SENSIBLE:	Load		=		0 B	TU/	hr :	Sched	lule No.	=		4
MISC. LATENT :	Load		=		0 B	TU/	hr :	Sched	lule No.	=		4
**************************************	*****	****	****	**** ND	***	***	***	****		****		
PARTITIONS (Nex	t to Unco	onditi	Loned	Spac	es)		U	ncond	litioned	Spac	e T	emp.
	Area		U.	-Valu	e			COOI	.ing	He	eati	ng
	(sqft)	•	(BTU/	hr/sq	ft/F	)	(d	eg F	or %)	(deg	Fo	r %)
Walls	1,328.0			0.310				 - 85 -	0 F		55.0	
Ceilings	0.0			0.100					0 F		0.0	
Floors	0.0			0.100					0 F		50.0	
INFILTRATION		_						ELEM				_
Cooling : 0.0				296					:			sqft
	n orwine	F+ ===		494	ベドM	P	er i m	eter	:	(	0.0	Ít
Heating : 0.1 Typical : 0.1				494			epth		:		0.0	e.

AIR SYSTEM DESCRIPTION 01-29-91 Name: #357 CENTRAL AHU Carrier Hourly Analysis Program 6100190202 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 2 \*\*\*\*\*\*\*\*\*\* 1. SYSTEM NAME AND TYPE System Name = #357 CENTRAL AHU

System Class = Constant Volume

System Type = (CV/RH) Constant Volume w/ Terminal Reheat

Number of Zones = 10 \*\*\*\*\*\*\*\*\*\*\* SPACE SELECTION (see separate printout) \*\*\*\*\*\*\*\*\*\*\* 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA OperationThermostat SetpointsVentilationPeriodCoolingHeatingDampers 
 Occupied
 75.0 F
 68.0 F
 OPEN

 Unoccupied
 75.0 F
 68.0 F
 OPEN
 Weekday : Occupied Period Begins at 0 ; Duration = 24 hrs Saturday : Occupied Period Begins at 0 ; Duration = 24 hrs Sunday : Occupied Period Begins at 0 ; Duration = 24 hrs Design Day : Occupied Period Begins at 0 ; Duration = 24 hrs

\_\_\_\_\_\_ \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# 4. SUPPLY, VENTILATION, RETURN AIR DATA

SUPPLY AIR

Supply temperature control = 107610.00 CFM = 1 Cons 1 Constant VENTILATION AIR

Nominal ventilation flow rate = 25.00 % of supply air Minimum ventilation flow rate = 25.00 % of supply air Damper leak rate = 5 % of vent air RETURN AIR Zone exhaust air flow rate = 100.00 % of vent. air

Zone exhaust fan power = 18.0 kW Is a return plenum used ? N

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

01-29-91 Name : #357 CENTRAL AHU 6100190202 Carrier Hourly Analysis Program Page 2 of 2 repared By : ENGG APPLICATIONS CONSUL \*\*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN 2:Forward curved Type = Static = 4.00 in wg Efficiency 54 % 1 Draw-thru Configuration RETURN FAN Type = 1:(Fan does not exist) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL (Not used) OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL (Not used) \*\*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA = 0.050 Cooling coil bypass factor = 1 Not Used Type of supplemental heating \*\*\*\*\*\*\*\*\*\*\*

### PLANT DESCRIPTIONS

PLANT DESC	CRIPTIONS				
Plant : BUILDING #357				01-30-	-91
Prepared By : ENGG APPLICA'	TIONS CONS	SUL		6100190	202
Carrier Hourly Analysis Pro				Page 1 or	f 1
********		*****	***	*****	***
1 PLANT NAME AND TYPES					
Class	= Indiv	idual Plants			
Name	= BUILD:				
	_	<del></del>			
Cooling Plant Type Heating Plant Type	= water	Cooled Centrifugal			
Heating Plant Type	= Compus	stion			
********	******	******	***	*****	***
2 AIR SYSTEM SELECTION					
•					
Air System Name	Mult	Air System Name		Muli	
#357 CENTRAL AHU	1				
******	*****	   * * * * * * * * * * * * * * * * * *	***	*****	***
3a COOLING PLANT DATA (Wate	er Cooled	Centrifugal)			
PLANT DATA	000200	· · · · · · · · · · · · · · · · · · ·			
Estimated maximum cooling	r coil los	ad.	_	414.11 Ton	
Capacity at 85.0 F conder				432.00 Ton	
Input power rate at 85.0		ser entering water		0.800 kW/	ron
Is chilled water reset us			?		
Number of sequenced chill			=	2	
Unloading schedule for se	equenced o	chillers	=	Individual	
HEAT SINK DATA					
Heat sink type				Open Tower	
Minimum condenser entering	ng water t	emperature		85.0 F	
*********	******	******	***	*****	***
3b HEATING PLANT DATA (Comb					
Estimated maximum heating	g coil loa	ıd	=	3375.33 MBH	,
Fuel type			=	Fuel Oil	
Rated plant output			=	3346.3 MBH	
Type of heating			=	Hydronic	
Is plant efficiency compu	iter gener	ated	?	•	
Seasonal plant efficiency			=	64 %	
**********		*****	***	*****	***
4 PUMP SYSTEM DATA					
Chilled water pumping sys	tem head		=	90.00 ft	wa
Chilled water pumping sys		, m	=		~9
			_	711117	
Condenser water pumping a			=		wg
Condenser water pumping a		ta T			
Hot water pumping system			=	00.00 20	wg
Hot water pumping system			<b>=</b>	30.00 F	
*********	*****	*********	***1	******	***

# BUILDING DESCRIPTION BUILDING #357

BUILDING D	ESCR1	PTIC	N					
Building : BUILDING #357								01-30-91
Prepared By: ENGG APPLICAT			SUL					6100190202
Carrier Hourly Analysis Pr	ogran	1					1	Page 1 of 1
******	****	***	*****	***	* * 1	*****	****	*****
1. BUILDING INPUTS								
BUILDING NAME				=	B	JILDING	#357	
MISCELLANEOUS ELECTRIC								
Maximum power				=		0.0	kW	
Power schedule				=		1		
DOMESTIC WATER HEATING								
Is a domestic how water		em us	sed	?		Y 400.0	_	
Maximum hourly hot water	use			=			gal	
Hot water schedule				=		5		
Average entering water t						65.0		
Average hot water supply	temp	erat	ure			140.0	_	
Heating plant type					_	: Combi		n
Fuel type						: Fuel		
Plant capacity						3346.3		
Is plant efficiency comp	uter	gene	erated	?		N		
Annual plant efficiency				=		64	8	
OTHER INPUTS							_	
Additional building floo	r are	a		=		3012.0	sqft	
Electrical generating ef	ficie	ency		==		100.00	*	
********	****	***	*****	***	* * 1	*****	****	*****
2. PLANT SELECTION								
Plant Name	MUI	τ.	Plant	Nan	ne 			Mult
BUILDING #357			 					
************			 	****		******		*******
3. FUEL & ELECTRIC RATE SE					•			
3. FUEL & ELECTRIC RATE SE								
Fuel or Energy				Sal	10/			Currency
ruei of Energy	NO.	Nai	me or race		16	e		
			ECTRIC RAT					MBTU
	-6	NA	TURAL GAS	_ (GE)	IEI	RICI		
Fuel Oil	5	מסת	MESTIC FUE	LOI	L.	#2 (GE)	NERIC	) MBTU
Propane	10	Em	TURAL GAS MESTIC FUE pty		_	(32.		MBTU
Remote Source Heating	10	Em	oty					MBTU
Remote Source Cooling			pty					MBTU
Memore Boarce Couring	-0	رااات						MDIO

### MONTHLY ENERGY COSTS

Building : BUILDING #357

Site : FORT BELVOIR, VIRGINIA

OIR, VIRGINIA 6100190202

01-30-91

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program Page 1 of 1

TABLE 1. HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	Remote Cooling
Jan	527	0	1,993	0	0	0
Feb	479	0	1,771	0	0	0
Mar	<b>5</b> 58	0	1,807	0	0	0
Apr	581	0	1,551	0	0	0
May	644	0	1,454	0	0	0
June	696	0	1,288	0	0	0
July	807	0	1,260	0	0	0
Aug	788	0	1,301	0	0	0
Sept	657	0	1,386	0	0	0
Oct	620	0	1,587	0	0	0
Nov	563	0	1,722	0	0	0
Dec	543	0	1,931	0	0	0
Tot.	7,463	0	19,051	0	0	0

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TABLE 2. NON-HVAC COSTS (MBTU)

fonth	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	
Jan	134	0	30	0	0	
Feb	. 122	0	27	0	. 0	
Mar	139	0	31	0	0	
Apr	138	0	31	0	0	
May	139	0	31	0	0	
June	129	0	29	0	0	
July	139	0	31	0	0	
Aug	139	0	31	0	0	
Sept	128	0	29	0	0	
Oct	139	0	31	0	0	
Nov	124	0	27	0	0	
Dec	134	0	30	0	0	
Tot.	1,605	0	358	0	0	

### FUEL OIL COSTS

Building : BUILDING #357

Site : FORT BELVOIR, VIRGINIA

01-30-91 6100190202

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program

Page 1 of 1

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TABLE 1. MONTHLY COMPONENT CHARGES (MBTU)

Month	Energy Charges	Fixed Charges	Taxes	Total Charges
Jan	2,023	0	0	2,023
Feb	1,798	0	0	1,798
Mar	1,838	0	0	1,838
Apr	1,582	0	0	1,582
May	1,485	0	0	1,485
June	1,317	0	0	1,317
July	1,291	0	0	1,291
Aug	1,332	0	0	1,332
Sept	1,415	0	0	1,415
Oct	1,618	0	0	1,618
Nov	1,749	0	0	1,749
Dec	1,961	0	0	1,961
Tot.	19,409	0	0	19,409

TABLE 2. MONTHLY TOTALS

\_\_\_\_\_\_

•		_	Effective
Month	Charges (MBTU)	Energy (Gallon)	Rate (MBTU/Gallon)
 Jan	2,023	14,582	0.13870
Feb	1,798	12,964	0.13870
Mar	1,838	13,251	0.13870
Apr	1,582	11,407	0.13870
May	1,485	10,709	0.13870
June	1,317	9,495	0.13870
July	1,291	9,307	0.13870
Aug	1,332	9,606	0.13870
Sept	1,415	10,199	0.13870
Oct	1,618	11,665	0.13870
Nov	1,749	12,613	0.13870
Dec	1,961	14,140	0.13870
 Tot.	19,409	139,938	0.13870

\*\*\*\*\*\*\*\*\*\*\*

THE SIMULATIONS ESTIMATED HEATING LOAD (3375,33 MBH)
IS WORST CASE CONDITION AND PROBABLY OCCURES
DURING JANUARY. THIS LOAD ONLY REPRESENTS THE
SYSTEMS SIMULATED WHICH REQUIRE SUMMER STEAM,

SINCE THE NEW LOCAL BOILER WILL ONLY BE NEEDED FROM HID APRIL THRU MID OCTOBER WE WILL NOT NEED AS LARGE A BOILER LOAD AS INDICATED BY THE COMPUTER SIMULATION.

IF WE TAKE THE AVERAGE MBTU FOR DAYS IN APRIL (WORST CASE) AND ADD 20% AS A SAFETY FACTOR THE RESULTANT LOAD WILL BE SUFFICIENT TO SELECT A LOCAL STEAM BOILER TO ACCOMMODATE THE BUILDINGS STEAM REQUIREMENTS DURING THE SUMMER.

SUMMER STEAM AVG MBTU/DAY

APR. 52.73 WORST CASE 52.73/24 = 2197 x 1.2 = 2636.5 MBH LOAD JULY 43.9

JULY 41.64

ALG. 42.96

SEPT. 45.64

OCT. 52.19

SELECT: HB SMITH PRESSURIZED, WET-BASE BOILER BURNER

MODEL 28-A-15, 110 Bhp, 18" × VENT

OVERALL EFFICIENCY W/PIPING LOSSES & PICK-UP = 64%

INPUT @ 32.5 GPH = 4508 MBH (CORRECTED)

CORRECTED NET OUTPUT = 2838.3 MBH

MA"L × 40" w × 66" h (3) 5" SUP. TAPS (1) 5" RET

357-58

MONTHLY MBTU EXPENDED FOR SUMMER REHEAT AND DOMESTIC HOT WATER GENERATION AS SIMULATED BY CAPPIER E-20 COMPUTER PROGRAM.

APR.	1582/2	=	791	MBTU	5704 GALS
MAY.		=	1485		10709
JUNE		=	1317		9 495
JULY		=	1291		9 307
AUGI.		=	1332		9 606
SEPT.		=	1415		10 199
OCT.	1618/2	=	809		5 833
			8,440	) MBTU	60,853 GKS

SELECT: 10,000 GAL OIL STORAGE TANK 10' \$ x 17'-1" L , 932016;

CONCEDUCTION COS	r setil	MATE		DATE PREPARED	199		^ £
CONSTRUCTION COST	EOII	AIN I		FER		SHEET	OF
ENERGY SAVINGS	OFPC	PTU	NITY '	SURVEY		CODE A <i>ltio desig</i>	gn completed)
FT. BELVOIR, VIE	CAINIA	. 1	BLDG	357 :	1 —	DOE D <i>(Preliminary</i> ] CODE C <i>(Final de</i>	
ARCHITECT ENGINEER ENGINEERING APPL	ICATION	US 6	CONSUL	TANTS	I 07	HER (Specify)	
DRAWING NO.  OIL FIRED LP STEAM BOIL		ESTIM	ATOP -	TEF.		CHECKED BY	>
	QUANT	ITY		LABOR		MATERIAL	
SUMMARY	NO. Units	UNIT MEAS.	PER UNIT	TOTAL	PER . Unit	TOTAL	COST
BOILER HOUSE ADDITION	216	SF	23	4968	14	3024	7992
DEMO	20	SY	3,03	61	4.22	85	146
OIL FIRED LP STEAM BOILER	1	EA		3975		17,350	21,325
10,000 GAL OIL STORAGE EQUIP.	1	15		12,437		18,856	31,293
MISC OIL MOOK-UP COSTS	1	15		606		930	1,536
VENT CHIMNEY 18"\$	36	14	9,25	333	95,70	3,445	3,778
FITTINGS, FLASHING, TOP Etc.		15		212		3036	3,248
AUTO PRE" LONTROL	1	EA	·	17		158	175
CTEAM PIPING, FITTING VALUE ETC		15		3503		3887	7390
CONDENSATE PIPING, TRAPS, Etc.		15		519		1385	1901
RETURN FEEDWATER SISTEM		15		1080		1133	2213
ELECTRICAL WORK LIGHTS & POWER	216	5F	3.70	800	5.50	1188	1988
SUB-TOTAL				28,508		54,477	52,985
14246 1424 110 210/				5987		_	5,987
LABOR MARK-UP 21%		-		- 101	<u> </u>	2451	2,451
TAXES 45%		1		34,495		56,928	91,423
OVERHEAD 10%	<u> </u>	1		J4,710		100, 140	9,142
	<u> </u> 	-	1				100,565
SUE-TOTAL 10%		-	1	:	.		10,057
		+			<u>                                     </u>		110,622
SUB TOTAL							1
	ı	1	1	1	1	<u> </u>	1
TOTAL							£110,625

# OIL STORAGE

	REQD. 19,000						
			LISTED, W/		orrosion f	PROTE	LTION
	<u> </u>	\$	30 YR WAR	RANTEE			-
-		<b>.</b>	·	<b>T</b>		•	
82	TANK 121	50	11,000	12,250	10'\$ x 17'	L	32.5 GPH
	HOLD DNS. 6	9	495	564		•	
	# 2" PIPING (40) 5	.B5 .	2.68 .63	9.16			<u></u>
	INCASED PIPING (40') B	,50	12.70 91	22.11			
158	FOOT VALVE	δ.	_ 69	B7			
	PUMP (2)	50	400	460	•• • •		
	TANK GAGE SYS	79.	715.	794.			
	VALUES (2)	8.25	84 7,75	124 <del>16.</del>			
	SHUT OFFS (4)	19.80	178. <del>11,75</del>	31.55			
	FAD CY (H)	25. 34	94.	119		•	
	EXCAVATION CY (280)	<del>46</del> .					
	_ DEMO & PAVE (1557)	9.42	23.80	33.22			- ··· ·
	DEMO/TRENCH/PAUE (25')	4.15	8.68	12.83			
						·	
		,437	16,526	28,963			
			<u>-</u>	···· • · ·			
	LEAK DETECTION SYSTE						
	CONTROL MASTER W/		•				
<del>-</del>	PROBES: 4"WELL						
	TANK WALL						
	CABLE						
	OPTIONAL LEAK DETEC	TION.	=2330				
•			<u>-</u>				
		1437	+ 18,856	= 31,	293		•
_							

# STEAM VALVES, PIPING, FITTINGS, VALVES Etc.

		. <b>L</b>	M	. T
132 (Z	) B" STM. VALVES OS Y	220	630	850
	BOILER DEAIN	5,80	11.90	17.70
87	5" PIPING (30')	11.10	11.33 1.19	2362
	8" PIPING (40')	19.10	18.16 1.32	38.58
	PIPING ( )			
110	8" WN/FLAUGE (4)	79	45 5.45	129,45
	8" 90°EU (4)	140	66 9.55	215.55
	8 TEE (2)	. 220	91 15.30	326.30
	5" WN/FL (3)	. 44	24 478	72.78
	5 90° (2)	91	26 7.65	124.65
	5 INS (40)	2.87	571	8.58
	8" INS (50)	4.31	7.24	11.55
		3503	3887	7390

# CONDENSATE PIPING, TRAPS

		<b>L</b>	M	T	
	2" PIPING (40')				
203	TRAP ASSEMBLY (3)	. 90.	370	410	
	MISC 10%				
	2" INS (15") (60')				

# RETURU FEEDWATER

	المالية المستوانية	<b></b>		
	PIPING (80')			
3"	VALUE (3)	79		194
	MISC FITINGS 10%	<b>8</b> 9	79	
3"	1115, (1/2) (90)	2.03	2.92	4.95
	•		00	2212

	ALL FUEL	CHIMNEY,	UL LISTED,	DOUBLE WALL,	304 IUNER - STL OUTER
--	----------	----------	------------	--------------	-----------------------

	L	M	Τ.		·	
(36) STR 18"\$	9.25	95.70	104.95			
(2) 45° EU	1845	320	338.45			
90° TEE	25	370	395	<u>-</u> '		
PLT. SUPPORT (4)	23	169	192			•
ROOF THIMBLE	23	380	403			
ROOF SUP. ASSEM.	25	545	570			
STACK CAP	10	425	435			
•	212	3036	3248		,	
	_				•	

# OIL HOOK-UP

	L	M	T 42.40				
FILTER	12.40 <del>9.90</del>	30. <del>9.95</del>	19.95				
VALVE	8.25	4.25	12.50				
VALVE	16.50	8.60	25.00				
2" VENT CAP	6.20	7.50	13,70		- ·		
2" TUBE (20)	5.85	2.68,63	9.16			•	
2" STL V.P. (30)	6.25	4.08.67	11.00		· - · · · · ·		
LOUVERS (Z)	35,	72.	107.	2838.3	/4000 = 710	× 1.5 10	5/144
DAMPERS (2)	91	260,	351.		7,49		
FILL CAP	6.70	7,50	13.70		.,		
and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	606	930	1536		and a company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the		

BUILDING 362

### DESIGN PARAMETERS, SHGs

Location : FT. BELVOIR, VIRGINIA

Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program 11-02-90 6022890201 Page 1 of 1

# \*\*\*\*\*\*\*\*\*\*\*\*\*

### DESIGN WEATHER PARAMETERS

City Name:	FT. BELVOIR
Location:	
Latitude:	38.4 deg
Elevation:	69.0 ft
Summer Design Dry Bulb Temp:	90.0 F
Summer Design Wet Bulb Temp:	75.0 F
Daily Temperature Range:	23.0 F
Winter Design Dry Bulb Temp:	12.0 F
Atmospheric Clearness Number:	1.00

TABLE 1. MAXIMUM SOLAR HEAT GAINS - AVERAGE DAYS (BTU/hr/sqft)

Month	NE	E	SE	s	SW	W	NW	N	Hor
Jan	24.2	61.1	97.3	110.1	97.3	61.1	24.2	24.2	80.0
Feb	31.8	74.8	105.7	113.8	105.7	74.8	31.8	31.8	107.2
Mar	40.8	87.0	106.9	108.0	106.9	87.0	40.8	40.8	136.8
Apr	60.0	97.4	104.4	97.2	104.4	97.4	60.0	49.3	164.3
May	74.9	103.0	98.4	84.0	98.4	103.0	74.9	54.9	181.8
Jun	85.1	109.3	97.5	79.2	97.5	109.3	85.1	57.9	195.2
Jul	80.6	106.7	98.1	81.4	98.1	106.7	80.6	56.4	189.3
Aug	69.1	104.1	105.7	94.4	105.7	104.1	69.1	52.2	177.6
Sep	52.3	99.3	114.8	111.6	114.8	99.3	52.3	45.4	158.1
Oct	36.4	88.3	117.7	122.9	117.7	88.3	36.4	36.4	128.2
Nov	26.7	66.5	101.8	113.3	101.8	66.5	26.7	26.7	89.4
Dec	21.4	53.0	87.6	100.9	87.6	53.0	21.4	21.4	68.4

TABLE 2. MAXIMUM SOLAR HEAT GAINS - DESIGN DAYS
(BTU/hr/sqft)

Month	NE	E	SE	S	sw	W	NW	N	Hor
Jan	20.4	158.9	243.9	253.8	243.9	158.9	20.4	20.4	142.0
Feb	53.0	189.1	246.5	237.5	246.5	189.1	53.0	24.7	187.7
Mar	95.9	219.8	234.5	200.7	234.5	219.8	95.9	29.4	229.0
Apr	141.6	224.4	200.1	146.7	200.1	224.4	141.6	34.1	256.0
May	166.1	220.1	170.7	104.6	170.7	220.1	166.1	37.4	268.0
Jun	173.2	215.4	156.7	87.8	156.7	215.4	173.2	47.4	269.7
Jul	163.7	215.7	166.5	101.4	166.5	215.7	163.7	38.3	264.7
Aug	136.4	216.6	193.1	141.7	193.1	216.6	136.4	35.8	251.3
Sep	90.3	207.2	224.7	194.9	224.7	207.2	90.3	30.6	221.4
Oct	52.0	182.7	238.2	230.6	238.2	182.7	52.0	25.5	184.4
Nov	20.7	156.1	239.8	249.9	239.8	156.1	20.7	20.7	141.3
Dec	18.5	141.9	236.4	254.2	236.4	141.9	18.5	18.5	122.2

DAY TYPE DATA

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program 6022890201

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Month	DAY TYPE 1 Weekday	DAY TYPE 2 Saturday	DAY TYPE 3 Sunday	Total Days/Month
January	21	4	6	31
February	19	4	5	28
March	22	5	4	31
April	21	4	5	30
May	22	4	5	31
June	21	5	4	30
July	21	4	6	31
August	23	4	4	31
September	19	5	6	30
October	23	4	4	31
November	21	4	5	30
December	20	5	6	31

## MASTER SCHEDULE SUMMARY

Page 1 01-29-91 repared By : ENGG APPLICATIONS CONSUL 6100190202 Carrier Hourly Analysis Program

arrier nourl	y Alla.	TABIR	PLOG					****	****	****	****	****
MASTER SCHEDU	LE 1	. occ	UPANC	Y 						tages		
Hour>	o	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	o	0	0	0	0	10	50	100	100	100	100
Saturday	0	0	0	0	0	0	5	5	5	10	10	10
Sunday	0	0	0	0	0	0	0	5	5	5	5	5
DESIGN	0	0	0	0	0	10	20	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	80	50	10	10	5	5	0	0
Saturday	10	10	10	5	5	5	5	5	0	0	0	0
Sunday	5	5	5	5	5	5	0	0	0	0	0	0
DESIGN	100	100	100	100	100 	100	100	20 	10	0	0 	0
**************************************	***** LE 2	*****	**** HTING	****	****	****				***** tages	****	***
	o	1	2	3	4	   5	6	   7	8	9	   10	11
Hour>		<u>+</u>	<u> </u>	3 	<del>"</del>			·	° 		<del></del>	
Weekday	5	5	5	5	5	5	20	80	100	100	100	100
Saturday	5	5	5	5	5	5	15	15	20	40	50	50
Sunday	5	5	5	5	5	5	5	15	20	30	30	30
DESIGN	10	10	10	10	10	20	50	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	90	70	40	30	20	20	5	5
Saturday	50	50	50	50	50	40	30	20	5	5	5	5
Sunday	30	30	30	20	20	20	20	5	5	5	5	5
DESIGN	100	100	100	100	100	100	100	50	20	10	10	10
*****	****				****	****		****		****	****	***
MASTER SCHEDU	LE 3	. EQU	IPMEN	r 			HOU:	riy P	ercen	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	5	5	5	5	5	5	20	50	100	100		100
Saturday	5	5	5	5	5	5	10	10	15	20	20	20
Sunday	5	5	5	5	5	5	5	10	10	10	10	20
DESIGN	10	10	10	10	10	20	40	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	80	50	20	10	5	5	5	5
Saturday	20	20	20	10	10	10	10	10	5	5	5	5
Sunday	20	15	15	10	10	10	10	5	5	5	5	5
DESIGN	100	100	100	100	100	100	100	40	20	10	10	10
*****	****	****	****	****	****	****	****	****	****	****	****	***

Page 2 MASTER SCHEDULE SUMMARY 01-29-91

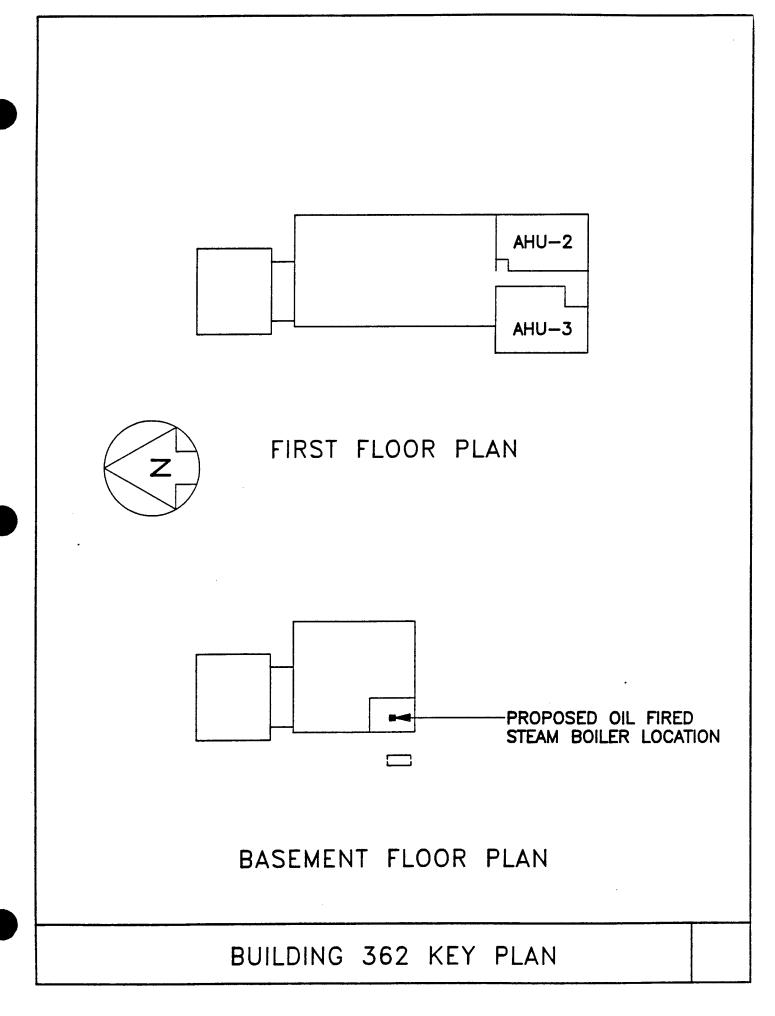
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6100190202

MASTER SCHEDU	LE 4	. DOM	ESTIC	HOT	WATER		Hou	rly Po	ercent	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	13
 Weekday	o	0	0	o	0	5	10	10	20	20	20	80
Saturday	0	0	0	0	0	2	2	2	5	5	5	
Sunday	0	0	0	0	0	0	0	2	2	2	2	2
DESIGN	0	0	0	0	0	5	5	20	20	20	20	80
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
 Weekday	80	20	20	20	10	10	5	5	5	2	0	0
Saturday	5	5	5	2	2	2	2	2	0	0	0	0
Sunday	2	2	2	2	2	2	0	0	0	0	0	
DESIGN	80	20	20	20	10	10	5	5	5	2	0	<b>C</b>

# ENGINEERING ANALYSIS

		Shee	et of
		By:	ÆF
	Calculations for Infil	teration	
	Building 36	2.	
Project: ESOS, Fort BE	ELVOIR		1990
	-C=0189 EAC Projec		<del>-</del>
	ASHRAE 1989 Page F 2.3.1		
Building Leakage Area	2707 1 LyC 1 L.512	•	
Buliding Leakage Area	Effective Leakage Area, in <sup>2</sup>	Building Component Parameter	Building Leakage Area D <sub>i</sub> L <sub>i</sub> , in <sup>2</sup>
	L,	$\mathbf{D}_{i}$	L
	0.063/ft <sup>2</sup> . of window 0.215/ft <sup>2</sup> . of doors 0.15/ft <sup>2</sup> . of window 0.072/ft <sup>2</sup> . of door	2565 165 165 165 165 165 165 165 165 165	48.45 30.60 4.05 35.48 14.40 11.60 12.80 167.60 in <sup>2</sup> .
Infiltration $Q(cfm) = L$	$x (A \Delta t + Bv^2)^{1/2}$		(ASHRAE 1989, P. 23.17, EQ.33)
<u> Vinter</u>	<u>Summe</u>	<u>r</u>	
Q(cfm)= = L(0.01313 x 51 + 0.019 = L x 2.2 =/67.66 x 2.2 = 369 CFM  tate = 369 344  = 0.11 CFM	·	= L x 1.45 = /67.66 x 1.45 Rate = <u>243.1</u>	= 243.1 CFM = 0.07 CFM/SF



SIMPLE SPACE DESCRIPTION

		SPACE DESCR					
Space Name : 1	ROOM 118	AHU-2 #36	2				-02-9
Prepared By :						6022	890201
Carrier Hourly	y Analysia	B Program				Page	1 of :
*****	****	*****	*****	*****	*****	*****	****
	Walls	Roof	Glass				
U-Value :	0.250	0.096	1.040		g Weight		
Weight :	L	L			actor		
Color :	D	D		Interna	l Shades	?	N
People : sqf	t/person	= 1378.0	Schedul	.e = 1	Activit	y Level	= :
Lights : W/s	qft	= 3.57	Schedul	.e = 2	Wattage	Mult.	= 1.20
: Fix	ture Type	= 3	Free-har	nging			
SPACE NAME	= ROOM 118	8 AHU-2 #					
				Floor Are		•	_
Exposure				Roof Area	:	1,378.0	sqft
Wall Area							
Glass Area		6.0		Elements			
*****				******	*****	*****	****
ADDITIONAL EL	ement - of	ther Electr	ic				
W/sqft	=	4.40					
Total Watts		6,063					
Schedule No	. =	3					
******	******	**************************************	*****	******	 ******	******	****
******	******** EMENT - Pa	************ artition sqft BTU/hr/sqf					
************* ADDITIONAL EL	******** EMENT - Pa	sqft					
***************  ADDITIONAL ELI  Area =  U-Value =	700.0 0.330	sqft BTU/hr/sqf					
***********  ADDITIONAL ELI  Area =  U-Value =  ***********************************	700.0 0.330 ********	sqft BTU/hr/sqf  *********	t/F Unco	ond. Space	Temp:He	ating =  *******	
**********  ADDITIONAL ELI  Area = U-Value =  ***************  ADDITIONAL ELI  Weight	700.0 0.330 ***********	sqft BTU/hr/sqf ************ all (lb/sqft)	t/F Unco	exposure	Temp:He	ating =  ******** S	68.0 I
**********  Area = U-Value =   ***********  ADDITIONAL ELI  Weight Color	700.0 0.330 *****************************	sqft BTU/hr/sqf ********** all (lb/sqft)	t/F Unco	ond. Space	Temp:He	ating =  *******	68.0 I
**********  ADDITIONAL ELI  Area = U-Value =  ***************  ADDITIONAL ELI  Weight	700.0 0.330 *****************************	sqft BTU/hr/sqf ************ all (lb/sqft)	t/F Unco	exposure	Temp:He	ating =  ******** S	68.0 1 *****
**********  ADDITIONAL ELI  Area = U-Value =  **********  ADDITIONAL ELI  Weight Color U-Value  ***********************************	700.0 0.330 ********* EMENT - W: = L = 0.38(	sqft BTU/hr/sqf  *********** all  (lb/sqft)  D BTU/hr/sq  **********	t/F Unco	Exposure Net Area	Temp:He	ating =  ******** S	68.0 I
**********  ADDITIONAL ELI  Area = U-Value =  **********  ADDITIONAL ELI  Weight Color U-Value  *************  ADDITIONAL ELI	********* EMENT - Pa  700.0 0.330  *******  EMENT - Wa  = L = 0.386  **********  EMENT - I	sqft BTU/hr/sqf  ************ all  (lb/sqft) D BTU/hr/sq  ***********	ft/F Unco	Exposure Net Area	Temp:He	ating =  ******** S	68.0 I
**********  ADDITIONAL ELI  Area = U-Value =  *********  ADDITIONAL ELI  Weight Color U-Value  ***********  ADDITIONAL ELI  Cooling	********* EMENT - Pa  700.0 0.330  *******  EMENT - Wa  = L = 0.386  **********  EMENT - In  ***********************************	sqft BTU/hr/sqf  ********** all  (lb/sqft)  D BTU/hr/sq  ********* nfiltration	ft/F Unco	Exposure Net Area	Temp:He	ating =  ******** S	68.0 I
*********  ADDITIONAL ELI  Area = U-Value =  *********  ADDITIONAL ELI  Weight Color U-Value  **********  ADDITIONAL ELI  Cooling Heating	******** EMENT - Pa  700.0 0.330  *******  EMENT - Wa  = L = 0.380  *********  EMENT - In  : 0.07 Cl : 0.11 Cl	sqft BTU/hr/sqf  ********** all (lb/sqft) D BTU/hr/sq  ******** nfiltration  FM/sqft = FM/sqft =	ft/F Unco	Exposure Net Area  ***********************************	Temp:He	ating =  ******** S	68.0 I
**********  ADDITIONAL ELI  Area = U-Value =  *********  ADDITIONAL ELI  Weight Color U-Value  ************  ADDITIONAL ELI  Cooling	******** EMENT - Pa  700.0 0.330  *******  EMENT - Wa  = L = 0.380  *********  EMENT - In  : 0.07 Cl : 0.11 Cl	sqft BTU/hr/sqf  ********** all (lb/sqft) D BTU/hr/sq  ******** nfiltration  FM/sqft = FM/sqft =	ft/F Unco	Exposure Net Area	Temp:He	ating =  ******** S	68.0 I
**********  ADDITIONAL ELI  Area = U-Value =  *********  ADDITIONAL ELI  Weight Color U-Value  **********  ADDITIONAL ELI  Cooling Heating Typical	*********  FMENT - Pa  700.0 0.330  ********  EMENT - Wa  = L = 0.380  *********  EMENT - In  0.07 Cl 0.11 Cl 0.11 Cl	sqft BTU/hr/sqf  ********** all  (lb/sqft) D BTU/hr/sq  ******** nfiltration  FM/sqft = FM/sqft = FM/sqft =	ft/F Unco	Exposure Net Area  ***********************************	Temp: He	s 202.0	68.0 I
**********  ADDITIONAL ELI  Area = U-Value =  ***********  ADDITIONAL ELI  Weight Color U-Value  ***********  ADDITIONAL ELI  Cooling Heating Typical  ************  ADDITIONAL ELI	*********  EMENT - Pa  700.0 0.330  *********  = L = 0.386  *********  EMENT - In  : 0.07 Cl : 0.11 Cl : 0.11 Cl : 0.11 Cl  EMENT - G	sqft BTU/hr/sqf  *********** all  (lb/sqft) D D BTU/hr/sq  ********* nfiltration  FM/sqft = FM/sqft = FM/sqft = FM/sqft =	ft/F Unco	Exposure Net Area  ***********************************	Temp: He ******* = = *******	ating =  *******  S  202.0  ********	68.0 ] *****  sqft  *****
**********  ADDITIONAL ELI  Area = U-Value =  ***********  ADDITIONAL ELI  Weight Color U-Value  ***********  ADDITIONAL ELI  Cooling Heating Typical  ************  ADDITIONAL ELI	*********  EMENT - Pa  700.0 0.330  *********  = L = 0.386  *********  EMENT - In  : 0.07 C1 : 0.11 C1 : 0.11 C1  *********	sqft BTU/hr/sqf *********** all (lb/sqft) D BTU/hr/sq ********* nfiltration FM/sqft = FM/sqft = FM/sqft = ************ round	ft/F Unco	Exposure Net Area  ***********************************	Temp: He ******* = = *******	ating =  *******  S  202.0  ********	68.0 1 *****  sqft  *****  *****
**********  ADDITIONAL ELI  Area = U-Value =  ***********  ADDITIONAL ELI  Weight Color U-Value  ***********  ADDITIONAL ELI  Cooling Heating Typical  ***********  ADDITIONAL ELI  Slab Floor	*********  EMENT - Pa  700.0 0.330  *********  EMENT - Wa  = L = 0.380  **********  EMENT - In  : 0.07 Cl : 0.11 Cl : 0.11 Cl  *********  EMENT - Gall  Area	sqft BTU/hr/sqf  *********** all  (lb/sqft)  D BTU/hr/sq  ******** nfiltration  FM/sqft = FM/sqft = FM/sqft = ********** round  = 1,37	ft/F Unco	Exposure Net Area  ***********************************	Temp: He ******* = = *******	ating =  *******  S  202.0  ********	68.0 E
**********  ADDITIONAL ELI  Area = U-Value =  ***********  ADDITIONAL ELI  Weight Color U-Value  ***********  ADDITIONAL ELI  Cooling Heating Typical  ***********  ADDITIONAL ELI  Slab Floor	700.0 0.330  ********  EMENT - Wa  EMENT - Wa  = L = 0.386  ********  EMENT - In  : 0.07 Cl : 0.11 Cl : 0.11 Cl  *********  EMENT - Gl  Area	sqft BTU/hr/sqf  *********** all  (lb/sqft) D BTU/hr/sq  ********* nfiltration  FM/sqft = FM/sqft = FM/sqft = ********** round  = 1,37	ft/F Unco	Exposure Net Area  ***********************************	Temp: He ******* = = *******	ating =  *******  S  202.0  ********	68.0 F

					ACE DE	SCRIPT	TON						
Space Name :												1-02	
Prepared By					NSUL					€	022	2890	20
arrier Hour	ly Ana	lysis	Progra	a.m						Pa	ıge	1 0	f
******	*****	*****	****	****	****	*****	***	****	***	****	**	***	* *
	Walls	_	Roof	_	Glass								
U-Value :					1.040			-					
Weight :	L		L					actor					
Color :	D		D			Int	erna	l Shad	les	?		N	
People : sq	[ft/per	Bon	= 156	5.0 8	Schedu	le =	1	Activ	ity	Leve	:1	=	
Lights : W/							2	Watta	ige 1	Mult.		= 1	. 2
: Fi	xture ?	Type	=	3 F1	ree-ha	nging							
SPACE NAME	= ROO!	 и 119	AHU-	3 #36	 52								
						Floor	Are	a :		1,56	55.0	) sq	ft
Exposure	:		S		W	Roof	Area	:		1,56	55.0	) sq	ft
Wall Area	:	402.	0	3	360.0	Curre	nt					_	
Glass Area		0.			96.0	Eleme	nts	:	E1,	Pt,Wl	, II	ı,Gr	
******	*****	****	****	*****	****	*****	***	*****	***	****	**1	***	* :
ADDITIONAL E	LEMENT	- Oth	er Ele	ctric	=								
W/sqft		=	4.40	)									
Total Watt													
Schedule N			•	ĺ									
					*****	*****	****	*****	***	****	***	****	*1
ADDITIONAL E Area = U-Value =	78 0	80.0 s	qft TU/hr	/sqft/	F Unc	ond. S	pace	Temp:	Hea	ting	=	68.	0
Area =	78	BO.O s	qft TU/hr,	/sqft/	F Unc	ond. S	pace	Temp:	Hea	ting	=	68.	0
Area = U-Value =	78 0.	330 B	qft TU/hr,	/sqft/  *****	/F Unc	ond. S	pace ****	Temp:	Hea	ting	=	68.	0
Area = U-Value =  ********** ADDITIONAL E  Weight Color	78 0. ****** LEMENT	B0.0 s .330 B ***** - Wal	qft TU/hr, ***** 1 (lb/so	/sqft/  ***** 	/F Unc	ond. S	pace **** ure	Temp:	Heat	****	= ***	68.	**
Area = U-Value =  ********** ADDITIONAL E  Weight	78 0. ****** LEMENT	B0.0 s .330 B ***** - Wal	qft TU/hr, ***** 1 (lb/so	/sqft/  ***** 	/F Unc	ond. S	pace **** ure	Temp:	Heat	****	= ***	68.	*
Area = U-Value =  *************  ADDITIONAL E  Weight Color U-Value  ***********************************	78 0. ******* *******	B0.0 s .330 E ****** - Wal L D	qft TU/hr, (lb/so	/sqft/ ***** qft) :/sqft	/F Unc	ond. S	pace **** ure	Temp:	Heat	****	= ***	68.	**
Area = U-Value =  ***********  ADDITIONAL E  Weight Color U-Value  ***********  ADDITIONAL E	78 0. ******* ******* *******	B0.0 s .330 B ****** - Wal D 0.380 ******	qft TU/hr,	/sqft/ ***** qft) :/sqft	/F Unc	Exposinet A	pace **** ure	Temp:	Heat	****	= ***	68.	**
Area = U-Value =  ***********  ADDITIONAL E  Weight Color U-Value  ***********  ADDITIONAL E	78 0. ******* ******* *******	B0.0 s .330 B ****** - Wal D 0.380 ******	qft TU/hr,	/sqft/ ***** qft) :/sqft	/F Unc	Exposi	pace **** ure	Temp:	Heat	****	= ***	68.	0 **
Area = U-Value =  *********** ADDITIONAL E  Weight Color U-Value  ************ ADDITIONAL E	78 0. ******* ******* *******	B0.0 s .330 B ****** - Wal D 0.380 ******	qft TU/hr,	/sqft/ ***** qft) :/sqft	/F Unc	Exposinet A	pace **** ure	Temp:	Heat	****	= ***	68.	**
Area = U-Value =  ************* ADDITIONAL E  Weight Color U-Value  *********** ADDITIONAL E  Cooling Heating Typical  *********** ADDITIONAL E	78 0. 2.****** CLEMENT = (0.0 2.******* CLEMENT	B0.0 s .330 B	qft TU/hr, ******  (lb/so BTU/hr ***** iltrat /sqft /sqft /sqft /sqft und	/sqft/ ****** qft) :/sqft ::ion = = =	/F Unc	Exposi Net A: ******	pace **** ure rea ****	Temp: ***** = *****	***:	202	**** S .0	68. **** sqf	0
Area = U-Value =  ************ ADDITIONAL E  Weight Color U-Value  ********** ADDITIONAL E  Cooling Heating Typical  ********** ADDITIONAL E	78 0. 2.****** CLEMENT = (0.0 2.******* CLEMENT	B0.0 s .330 B	qft TU/hr, ******  (lb/so BTU/hr ***** iltrat /sqft /sqft /sqft /sqft und	/sqft/ ***** qft) :/sqft ::ion = = :*****	/F Unc	Exposi Net A: ******	pace **** ure rea ****	Temp: ***** = *****	***:	202	**** S .0	68. **** sqf	0 t
Area = U-Value =  ************* ADDITIONAL E  Weight Color U-Value  *********** ADDITIONAL E  Cooling Heating Typical  *********** ADDITIONAL E	78 0. 2.****** CLEMENT = (0.0 2.******* CLEMENT	B0.0 s .330 B	qft TU/hr, ******  (lb/so BTU/hr ***** iltrat /sqft /sqft /sqft /sqft	/sqft/ ***** qft) :/sqft ::ion = = = 1,565.	/F Unc	Exposi Net A: ******	pace **** ure rea ****	Temp: ***** = *****	***:	202	**** S .0	68. **** sqf	0 t

System Name = AHU-2 ROOM 118 System Class = Constant Volume

System Type = (CV/RH) Constant Volume w/ Terminal Reheat

Number of Zones = 1

\*\*\*\*\*\*\*\*\*\*\*\*

2. SPACE SELECTION (see separate printout)

\*\*\*\*\*\*\*\*\*\*\*\*

\_\_\_\_\_\_

### 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA

Operation		Thermostat	Setpoints	Ventilation
Period		Cooling	Heating	Dampers
Occupied		75.0 F	68.0 F	OPEN
Unoccupied		75.0 F	68.0 F	CLOSED
Weekday Saturday Sunday Design Day	: Occupied : Occupied	Period Begins Period Begins Period Begins Period Begins	at 0; at 0;	Duration = 24 hrs Duration = 24 hrs Duration = 24 hrs Duration = 24 hrs

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# 4. SUPPLY, VENTILATION, RETURN AIR DATA

SUPPLY AIR

Supply air flow rate = 3500.00 CFM Supply temperature control = 1 Constant

VENTILATION AIR

Nominal ventilation flow rate = 3500.00 CFM Minimum ventilation flow rate = 3500.00 CFM

Damper leak rate = 5 % of vent air

RETURN AIR

Zone exhaust air flow rate = 3500.00 CFM

Zone exhaust fan power = 1.2 kW

Is a return plenum used ? N

\*\*\*\*\*\*\*\*\*\*\*

11-02-90 Name: AHU-2 ROOM 118 6022890201 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 2 of 2 \*\*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN 2:Forward curved Type = = 1.50 in wg Static Efficiency = 65 % Configuration = 1 Draw-thru RETURN FAN = 1:(Fan does not exist) Type \*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL Setpoint temperature = 42.0 F OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL Upper RH setpoint = 50 % Lower RH setpoint = 40 % 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050

Type of supplemental heating = 1 Not Used \*\*\*\*\*\*\*\*\*\*\*

Name: AHU-3 ROOM 119 Carrier Hourly Analysis Program

'repared By : ENGG APPLICATIONS CONSUL

01-29-91 6100190202

Page 1 of 2 \*\*\*\*\*\*\*\*\*\*

1. SYSTEM NAME AND TYPE

System Name = AHU-3 ROOM 119

System Class = Constant Volume
System Type = (CV/RH) Constant Volume w/ Terminal Reheat

Number of Zones = 1

\*\*\*\*\*\*\*\*\*\*\*\*

2. SPACE SELECTION (see separate printout)

\*\*\*\*\*\*\*\*\*\*\*

### 3. THERMOSTAT & EQUIPMENT SCHEDULING DATA

Operation		Thermostat	Setpoints	Ventilation
Period		Cooling	Heating	Dampers
Occupied		75.0 F	68.0 F	OPEN
Unoccupied		75.0 F	68.0 F	CLOSED
Weekday Saturday Sunday Design Day	: Occupied : Occupied	Period Begins Period Begins Period Begins Period Begins	at 0;	Duration = 24 hrs Duration = 24 hrs Duration = 24 hrs Duration = 24 hrs

\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 4. SUPPLY, VENTILATION, RETURN AIR DATA

SUPPLY AIR

Supply air flow rate = 4200.00 CFM Supply temperature control 1 Constant

VENTILATION AIR

4200.00 CFM Nominal ventilation flow rate = 4200.00 CFM Minimum ventilation flow rate =

5 % of vent air Damper leak rate

RETURN AIR

4200.00 CFM = Zone exhaust air flow rate 1.9 kW Zone exhaust fan power = ? Is a return plenum used N \*\*\*\*\*\*\*\*\*\*

#### AIR SYSTEM DESCRIPTION

01-29-91 Name: AHU-3 ROOM 119 6100190202 Carrier Hourly Analysis Program Prepared By : ENGG APPLICATIONS CONSUL Page 2 of 2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN 2:Forward curved Type Static Efficiency = 1.50 in wg = 65 % = 1 Draw-thru Configuration RETURN FAN = 1:(Fan does not exist) Type \*\*\*\*\*\*\*\*\*\*\*\*\* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL Setpoint temperature = 42.0 F OUTDOOR AIR ECONOMIZER CONTROL (Not used) VENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL Upper RH setpoint = 50 % Lower RH setpoint = 40 % \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050

Type of supplemental heating = 1 Not Used \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# PLANT DESCRIPTIONS

PLANT DE	SCRIPTIONS				•
Plant : #2 OIL FIRED BOIL					01-29-91
Prepared By : ENGG APPLIC	ATIONS CONS	UL			6100190202
_ Jarrier Hourly Analysis P:					Page 1 of 1
***********	*****	*****	*****	**	*****
1 PLANT NAME AND TYPES					
Class	= Indivi	dual Plan	ts		
Name	= #2 OIL	FIRED BO	ILER		
Cooling Plant Type			procating		
Heating Plant Type	= Combus	tion			
********	******	*****	******	**:	******
2 AIR SYSTEM SELECTION					
Air System Name		Air Sy			Mult
AHU-2 ROOM 118	1	AHU-3	ROOM 119		1
**********				**	******
3a COOLING PLANT DATA (Ai:			ng)		
Estimated maximum cooling				=	1
Is an electronic expans		sed		?	_
Capacity at 95.0 F outde					110.00 Ton
Input power rate at 95.		air		=	1.200 kW/Ton
Is chilled water reset	used			?	
Design leaving water ter	mperature			=	42.0 F
Is hot gas bypass used				?	Y
Part load % for minimum				-	20 %
******	******	*****	******	**	*****
3b HEATING PLANT DATA (Co	mbustion)				
Estimated maximum heati	ng coil loa	đ			714.98 MBH
Fuel type				=	Fuel Oil
Rated plant output					1026.0 MBH
Type of heating				=	Hydronic
Is plant efficiency comp		ated		?	N
Seasonal plant efficiend				=	61 %
*******	*****	*****	*****	* * 1	******
4 PUMP SYSTEM DATA					
Chilled water pumping s	ystem head			=	57.00 ft wg
Chilled water pumping s	ystem delta	T		=	10.00 F
Hot water pumping system				=	40.00 ft wg
Hot water pumping system				=	20.00 F

# BUILDING DESCRIPTION

Building: BUILDING 362 Prepared By: ENGG APPLICA Carrier Hourly Analysis P ************************************	rogran	n					P:	01-29-91 6100190202 age 1 of 1 ******
MISCELLANEOUS ELECTRIC Maximum power Power schedule					=	0.0	kW	
DOMESTIC WATER HEATING Is a domestic how water Maximum hourly hot wate Hot water schedule Average entering water Average hot water suppl Heating plant type Fuel type Plant capacity Is plant efficiency com Annual plant efficiency OTHER INPUTS Additional building flo Electrical generating e ************************************	r use temper y temp puter or are fficie	gene	erated	: : : : : : : : : :	= = 2 = 2 = ? = = = ***	Y 180.0 4 65.0 140.0 : Combu : Fuel 1026.0 N 61	gal F F Istion Oil MBH % sqft %	
	Mul	.t	Pla					Mult
#2 OIL FIRED BOILER ************************************	1 ***** ELECTI	*** ON	*****			*****	*****	*****
	No.		ne of Ra			dule		Currency
Flactric	10 6 5 9	NAT DOM Emp	ty	S (G)	ENE: DIL	RIC) #2 (GEI	NERIC)	MBTU MBTU MBTU MBTU MBTU MBTU MBTU

FUEL RATE DATA

Fuel Rate : DOMESTIC FUEL OIL #2 (GENERIC)
Prepared By : ENGG APPLICATIONS CONSUL

6100190202

arrier Hourly Analysis Program

Page 1 of 1

01-29-91

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1. FUEL RATE DATA

NAME

Name of rate schedule = DOMESTIC FUEL OIL #2 (GENERIC)

CURRENCY

Currency name = MBTU
Currency symbol = MBTU

BASIC INFORMATION

Units of measurement = Gallon

Conversion factor = 138.70000 kBTU/Gallon Type of rate schedule = 1 Simple

Flat rate charge = 0.13870 MBTU/Gallon

### MONTHLY ENERGY COSTS

Building: BUILDING 362 01-29-91 Site: FT. BELVOIR, VIRGINIA 6100190202

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program Page 1 of 1

TABLE 1. HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	Remote Cooling
Jan	16	0	459	0	0	0
Feb	14	0	378	0	0	0
Mar	31	0	263	0	0	0
Apr	49	0	114	0	0	0
May	68	0	80	0	0	0
June	79	0	63	0	0	0
July	103	0	61	0	0	0
Aug	95	0	62	0	0	0
Sept	71	0	74	0	0	0
Oct	59	0	102	0	0	0
Nov	34	0	204	0	0	0
Dec	16	0	391	0	0	0
Tot.	636	0	2,251	0	0	0

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TABLE 2. NON-HVAC COSTS (MBTU)

Remote Heating	Propane	Fuel Oil	Natural Gas	Electric	ionth
 0	0	14	0	23	Jan
0	0	13	0	21	Feb
0	0	15	0	24	Mar
0	0	14	0	. 23	Apr
0	0	15	0	24	May
0	0	14	0	23	June
0	0	14	0	23	July
0	0	15	0	25	Aug
0	0	13	0	21	Sept
0	0	15	0	25	Oct
0	0	14	0	23	Nov
 0	0	14	0	22	Dec
 0	0	170	0	276	Tot.

### FUEL OIL COSTS

Building: BUILDING 362

Rite: FT. BELVOIR, VIRGINIA

01-29-91 6100190202

/repared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program \*\*\*\*\*\*\*\*\*\*\*\*

Page 1 of 1

TABLE 1. MONTHLY COMPONENT CHARGES (MBTU)

Month	Energy Charges	Fixed Charges	Taxes	Total Charges
Jan	473	0	0	473
Feb	391	0	0	391
Mar	278	0	0	278
Apr	128	0	0	128
May	94	0	0	94
June	77	0	0	77
July	75	0	0	75
Aug	78	0	0	78
Sept	87	0	0	87
Oct	117	0	0	117
Nov	218	0	0	218
Dec	404	0	0	404
Tot.	2,420	0	0	2,420

TABLE 2. MONTHLY TOTALS

Month	Charges (MBTU)	Energy (Gallon)	Effective Rate (MBTU/Gallon)
 Jan	473	3,408	0.13870
Feb	391	2,820	0.13870
Mar	278	2,006	0.13870
Apr	128	924	0.13870
May	94	679	0.13870
June	77	559	0.13870
July	75	540	0.13870
Aug	78	559	0.13870
Sept	87	625	0.13870
Oct	117	845	0.13870
Nov	218	1,571	0.13870
Dec	404	2,914	0.13870
Tot.	2,420	17,450	0.13870

THE SIMULATIONS ESTIMATED HEATING LOAD (714.95 MEH)
IS WORST CASE CONDITION AND PROBABLY OCCURES
DURING JANUARY. THIS LOAD ONLY REPRESENTS THE
SYSTEMS SIMULATED WHICH REQUIRE SUMMER STEAM,

SINCE THE NEW LOCAL BOILER WILL ONLY BE NEEDED FROM MID APRIL THRU MID OCTOBER WE WILL NOT NEED AS LARGE A BOILER LOAD AS INDICATED BY THE COMPUTER SIMULATION.

IF WE TAKE THE AVERAGE MBTU FOR DAYS IN APRIL (WORST CASE) AND ADD 20% AS A SAFETY FACTOR THE RESULTANT LOAD WILL BE SUFFICIENT TO SELECT A LOCAL STEAM BOILER TO ACCOMMODATE THE BUILDINGS STEAM REQUIREMENTS DURING THE SUMMER.

SUMMER STEAM

AVG. MBTU/DAY

V

APR 4.27 -

4.27 / 24 = 178 MBH x 1,20 = 114 MFH

MAY 3.04

JUNE 2.57

JULY 2.42

Aug. 252

SEPT. 29

OCT. 3.78

SELECT: PEERLESS SERIES 7 FDA INDUSTRIAL/COMMERCIAL

ZAST IEON BOILER/BURNER UNIT

MODEL 704 FDA SU, 13 Bhp, 9 " & VENT, 4 SECTIONS

OVERALL EFFICIENCY W/PIPING LOSSES \$ PICKUP = 51%

INPUT @ 395 GPH # Z = 548 MBH (CORRECTED)

CORRECTED NET OUTPUT = 331 MBH

36 "L × 35" W × 60"h (2) 4" SUP TAPS (1) 3" RET

COMPUTER SIMULATED MAX. EST. HTG LOAD = 714.98 MEH

ENERGY EXPENDED FOR HEATILLS & DOMESTIC HAN BELIEFATION

APR MBTU = 128

JAN " = 473

128/473 = ,2706 x 714.98 = 193.5 MEH + DOM HW LOVE

1. USE 21 MBH FOR BOILER SIZING
TO TAKE LOAD FROM MID-APPIL -> MID OCTOFER

MONTHLY METU EXPENDED FOR SUMMER REHEAT AND DOMESTIC HOT WATER GENERATION AS SIMULATED BY CARRIER E-20 COMPUTER PROGRAM.

APR.	128/2	=	64	MBTU	462 GALS
MAY.		=	94		679
JUNE		=	77	,	559
JULY		=	75		540
AUGI.		=	78		559
SEPT.		=	<b>6</b> 7		625
OCT.	117/2	=	59		43
		_	534	MBTU	3847 GALS

SELECT: 1000 GAL OIL STORAGE TANK

CONSTRUCTION COST	ESTI	MATE	7	DATE PREPARED FEB	199	SHEET	GF
PROJECT	Am.	- C T				R ESTIMATE	
ENERGY SAVINGS						CODE A (No desi	
FT. BELVOIR VIE	GINIA		BUG	367 1	· —	CODE C (Final de	=
ENGINEERING APPL	ICATION	VS 6	CONSU!	LTANTS	07	HER (Specify)	
DRAWING NO.  OIL FIRED LP STEAM BO		ESTIM	ATOR	CEF		CHECKED BY VF	
	QUANT	ITY		LABOR		MATERIAL	TOTAL
SUMMARY	NO. UNITS	UNIT MEAS.	PER UNIT	TOTAL	PER UNIT	TOTAL	COST
			·				
OIL FIRED LP STEAM BOILER		EA		1525		8,150	9,675
1000 GAL OIL STORAGE EQUIP.		15		3250		8,552	11,802
MISC HOOK UP COSTS		LS		446		309	755
VENT CHIMNEY 9"\$	30	LF	7.30	219	58,30	1749	1968
FIT DOS, FLEHING, TOP, ETC.		LS		144		1933	257.7
AUTO DEATH REGULATORS	1	EA		13		53	66
STEAM PIPIUM, FITTINGE, VILVES, ETC		LS		1,504		813	2317
CONDENSATE PIFILIGI, TRAFS LTC.		15		368		859	1227
RETURN FEEDWATER SYSTEM		15		508		731	1239
ELECTRICAL WORK		15		475		225	700
SUB-TOTAL				8452		23,374	31,826
						<del></del>	
							3
LABOR MARK-UP 21%				1775			1775
TAXES 45%						1,052	1 052
SUB-TOTAL							34,653
overhead 10%							3,465
SUB-TOTAL							38,118
PROFIT 10%		<u> </u>					3812
SUB-TOTAL		<u> </u>					41,930
					l I		/102-
TOTAL					Ì		41,930

# OIL STORAGE

	REQD. 19	000 GAL.	UNDERGR	OUND, DO	OUBLE WALL, &	TEEL
					derosion pr	COTECTION
-			30 YR WARR			
		. L	3200	T	4' x 10'9' 1	•
182	TANK	190	•	3390	4 P X 107 (	-
	HOLD DNS.		270 147 .41	317 5.70		
	1" PIPING (30')					
	SED PIPING (36)		10, 15 .76 34.50	46.90		
<b>58</b>	FOOT VALVE			4670		
	PUMP (2)	•	395 315	794.		
· • · •	TANK GAGE SYS	79.	715. 50.25	60 65	•	
	VALVES (Z)	22	96	118		
	SHUT OFFS (2)		94	119	-	••
	PAD CY (5)	27	94.	117		
	excavation by (83)	) - =				
		3250	6222	9472		<u> </u>
		52.50	, <i>D2</i>	1112		
	<u> </u>				• •	
	La la La La La La La La La La La La La La La					· · · · · · · · · · · · · · · · · · ·
			<u>.</u>	. • • • • • •		
						<u>.</u> . <u></u>
an indicate a second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second desired and the second d	LEAK DETECTION	1 SYSTEM		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
	CONTROL MISTER					
	PEOBES! 4"					
	CABLE					
	OPTIONAL LEAK DI					
	ment of the factors of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the stat	-,, 1010.			<u> </u>	
et i	· · · · ·					
	· · · · · ·	3250 +	8552	= 11.8		
	· -			٠,١,٠		

ALL FUEL CHIMNEY	, UL LISTED,	DOUBLE WALL	, 304 INNER - STL OUTER
------------------	--------------	-------------	-------------------------

(30') STR 9"\$	<b>L</b> 7.30	M 58.30	T 65,60		
(2) 45° EU	H.60	195	209,60		
90° TEE	16.70	214	230.70		• •
PLT. SUPPORT	17.55	123	140.55		,
ROOF THIMBLE	N 55	310	327,55		
ROOF SUP. ASSEM.	18.45	405	423.45	·	
STACK CAP	8.75	245	253.75	-	
	144	1933	2077		 
				-	 

# OIL HOOK-UP

	L	M	T		•
FILTER	9.90	9.95	19.95		
VALVE (Z)	8.25	4.25	12.50		
VALVE (2)	16.50	8,60	25.00		<u>.</u>
2" VENT CAP	6.20	7.50	13.70	·	
TUBE (15')	3.82	1.88	5.70		
2" STL V.P. (35')	6.25	4.08,67	11.00		
LOUVERS	20	. <b>8</b>	. 28	331000/4000= 114	EN CALE
DAMPERS	26	24	50		
FILL CAP	6.70	7,50	13.70		
	446	309	755		

# STEAM VALVES, PIPING, FITTINGS, VALVES Etc.

		L	M	, <b>T</b>	
132	4" STM. VALVES 054 4 (2)	120	215	335	
	BOILER DEAIN	5,80	11.90	17.70	/m &
87	4" PIPING (20')	9.60	6.77 1,03	17.40	4
	PIPING ( )				
	PIPING ( )				
110	4" WN/FLAUGE (6)	36	_ 15	51.00	
	4" 90° ELL (4)	71	14.90. 7.65	93.55	
	4" TEE (1)	120	27 12.75	159.75	
	4 WELDING (10)	36	3.87	39.87	
	4 115 (30)	2.87	5.71	8.58	
		1504	813	2317	

# CONDENSATE PIPING, TRAPS

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1/2" PIPING (ZO)	4.68	2.11 .5	
TRAP ASSEMBLY (2)	90	320	410
1US (35)			
WELD LABOR (6)			
MISC 10%			

# RETURU FEEDWATER

	<b>L</b>		
1/2 PIPING (20)	4.68	2.16	
VALUE (2)	18.	140.	
MISC FITTINGS 20%	26	66	
INS (30)	1.72	2.37	409
CONTROL CARNES	<b>2</b> 07.2 3∞	461	669
	-	25731	1239

BUILDING 363

# DESIGN PARAMETERS, SHGs

Location: FT. BELVOIR, VIRGINIA
Prepared By: ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program Page 1 of 1

11-12-90

6022890201

#### DESIGN WEATHER PARAMETERS

TABLE 1. MAXIMUM SOLAR HEAT GAINS - AVERAGE DAYS (BTU/hr/sqft)

Month	NE	E	SE	s	SW	W	NW	N	Hor
Jan	24.2	61.1	97.3	110.1	97.3	61.1	24.2	24.2	80.0
Feb	31.8	74.8	105.7	113.8	105.7	74.8	31.8	31.8	107.2
Mar	40.8	87.0	106.9	108.0	106.9	87.0	40.8	40.8	136.8
Apr	60.0	97.4	104.4	97.2	104.4	97.4	60.0	49.3	164.3
May	74.9	103.0	98.4	84.0	98.4	103.0	74.9	54.9	181.8
Jun	85.1	109.3	97.5	79.2	97.5	109.3	85.1	57.9	195.2
Jul	80.6	106.7	98.1	81.4	98.1	106.7	80.6	56.4	189.3
Aug .	69.1	104.1	105.7	94.4	105.7	104.1	69.1	52.2	177.6
Sep	52.3	99.3	114.8	111.6	114.8	99.3	52.3	45.4	158.1
Oct	36.4	88.3	117.7	122.9	117.7	88.3	36.4	36.4	128.2
Nov	26.7	66.5	101.8	113.3	101.8	66.5	26.7	26.7	89.4
Dec	21.4	53.0	87.6	100.9	87.6	53.0	21.4	21.4	68.4

TABLE 2. MAXIMUM SOLAR HEAT GAINS - DESIGN DAYS (BTU/hr/sqft)

Month	NE	E	SE	s	sw	W	NW	N	Hor
Jan	20.4	158.9	243.9	253.8	243.9	158.9	20.4	20.4	142.0
Feb	53.0	189.1	246.5	237.5	246.5	189.1	53.0	24.7	187.7
Mar	95.9	219.8	234.5	200.7	234.5	219.8	95.9	29.4	229.0
Apr	141.6	224.4	200.1	146.7	200.1	224.4	141.6	34.1	256.0
May	166.1	220.1	170.7	104.6	170.7	220.1	166.1	37.4	268.0
Jun	173.2	215.4	156.7	87.8	156.7	215.4	173.2	47.4	269.7
Jul	163.7	215.7	166.5	101.4	166.5	215.7	163.7	38.3	264.7
Aug	136.4	216.6	193.1	141.7	193.1	216.6	136.4	35.8	251.3
Sep	90.3	207.2	224.7	194.9	224.7	207.2	90.3	30.6	221.4
Oct	52.0	182.7	238.2	230.6	238.2	182.7	52.0	25.5	184.4
Nov	20.7	156.1	239.8	249.9	239.8	156.1	20.7	20.7	141.3
Dec	18.5	141.9	236.4	254.2	236.4	141.9	18.5	18.5	122.2

# MASTER SCHEDULE SUMMARY

Prepared By : ENGG APPLICATIONS CONSUL

Page 1 11-12-90 6022890201 Carrier Hourly Analysis Program

carrier nour	A WIIG		****	****					****	****	****	****
MASTER SCHEDU	LE 1	. occ	UPANC	Y			Hou		ercen			
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	0	0	0	0	0	10	50	100	100	100	100
Saturday	0	0	0	0	0	0	5	5	5	10	10	10
Sunday	0	0	0	0	0	0	0	5	5	5	5	5
DESIGN	0	0	0	0	0	10	20	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	80	50	10	10	5	5	0	0
Saturday	10	10	10	5	5	5	5	5	0	0	0	0
Sunday	5	5	5	5	5	5	0	0	0	0	0	0
DESIGN	100	100	100	100	100	100	100	20	10	0	0	0
*****					****	****					****	***
MASTER SCHEDU	LE 2	. LIG	HTING				нои 		ercen	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	5	5	5	5	5	5	20	80	100	100	100	100
Saturday	5	5	5	5	5	5	15	15	20	40	50	50
Sunday	5	5	5	5	5	5	5	15	20	30	30	30
DESIGN	10	10	10	10	10	20	50	100	100 	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	90	70	40	30	20	20	5	5
Saturday	50	50	50	50	50	40	30	20	5	5	5	5
Sunday	30	30	30	20	20	20	20	5	5	5	5	5
DESIGN	100	100	100	100	100	100	100	50	20	10	10	10
*****	*****				****	****					****	***
MASTER SCHEDU	LE 3		IPMEN				Hou:	LIA b	ercen	cages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	5	5	•	1	1	5	20	50	100	100	100	100
Saturday	5	5	5	5	5	5	10	10	15	20	20	20
Sunday	5	5	5	5	5	5	5	10	10	10	10	20
DESIGN	10	10	10	10	10	20	40	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100		100	100	80	50	20	10	5	5	5	5
Saturday	20	20	20	10	10	10	10	10	5	5	5	5
Sunday	20	15	15	10	10	10	10	5	5	5	5	5
DESIGN	100	100	100	100	100	100	100	40	20	10	10	10
*****	****	****	****	****	****	****	****	****	****	****	****	***

MASTER SCHEDULE SUMMARY Page 1 Prepared By : ENGG APPLICATIONS CONSUL 11-12-90 6022890201 Carrier Hourly Analysis Program

MASTER SCHEDU	LE 4	. DOM	ESTIC	HOT 1	WATER		Hou	rly Po	ercen	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	0	0	0	0	5	10	10	20	20	20	80
Saturday	0	0	0	0	0	2	2	2	5	5	5	5
Sunday	0	0	0	0	0	0	Ö	2	2	2	2	2
DESIGN	0	0	0	0	0	5	5	20	20	20	20	80
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	80	20	20	20	10	10	5	5	5	2	0	0
Saturday	5	5	5	2	2	2	2	2	0	0	0	0
Sunday	2	2	2	2	2	2	0	0	0	0	0	0
DESIGN	80	20	20	20	10	10	5	5	2	2	0	0

DAY TYPE DATA

Prepared By : ENGG APPLICATIONS CONSUL

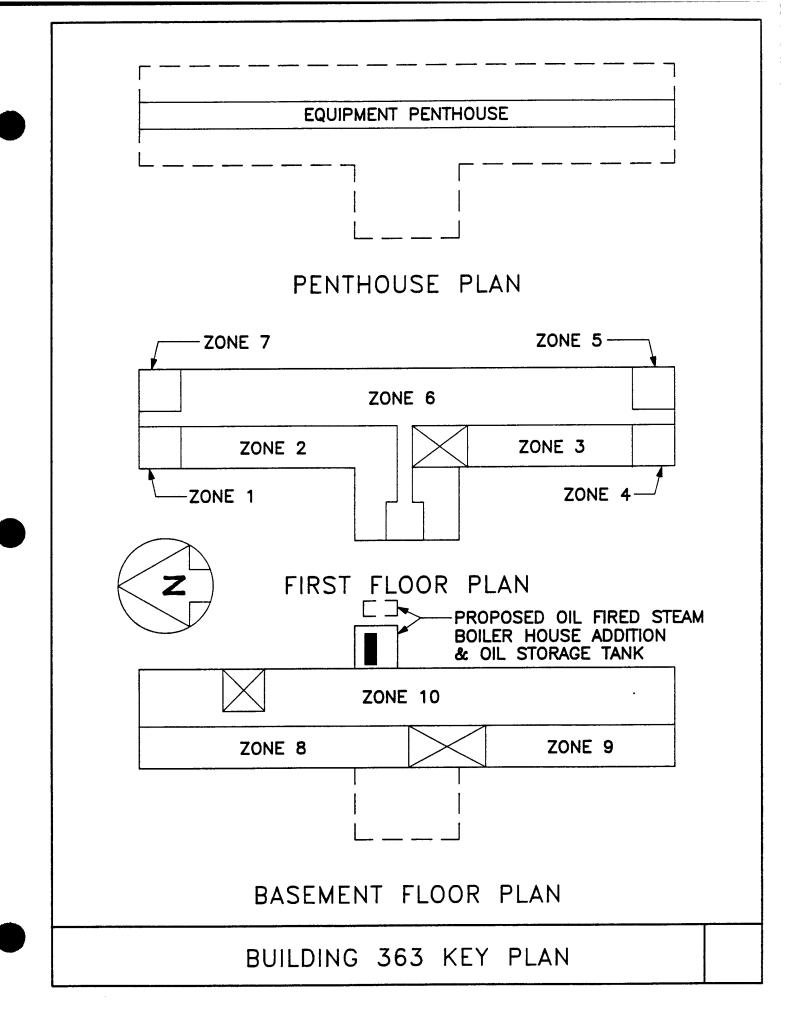
Page 1 01-31-91 6100190202

Parrier Hourly Analysis Program 6100190202

Month	DAY TYPE 1 Weekday	DAY TYPE 2 Saturday	DAY TYPE 3 Sunday	Total Days/Month
January	21	4	6	31
February	19	4	5	28
March	22	5	4	31
April	21	4	5	30
May	22	4	5	31
June	21	5	4	30
July	21	4	6	31
August	23	4	4	31
September	19	5	6	30
October	23	4	4	31
November	21	4	5	30
December	20	5	6	31

# ENGINEERING ANALYSIS

		Sheet	: of
		Ву: _	REF
	Calculations for Infil	teration	
	Building 36	3	
Project: ESOS, Fort E	ELVOIR	Date: NOV.	1990
Contract No: DACA-31-89-	-C=0189 EAC Projec	t No.: 89034.0	
Calculations based on P	ASHRAE 1989 Page F 2.3.1	4.	1
Building Leakage Area	Matana in Tarina	<b>.</b>	
	Effective Leakage Area, in <sup>2</sup>	Building Component Parameter	Building Leakage Area D <sub>i</sub> L <sub>i</sub> , in <sup>2</sup>
	L,	D,	L
Sill foundation Joints, ceiling/wall Windows Doors Wall - Window frames - Door frames Elec. outlet/switch Recessed lights Pipe penetration Exhaust fans Duct penetration FCU openings  Infiltration Q(cfm) = L	0.19/ft. of perimeter 0.12/ft. of wall 0.063/ft². of window 0.215/ft². of doors 0.15/ft². of window 0.072/ft². of door 0.16/fixture 1.6/fixture 1.55/in². of pipe, 6.0/fan 2.2/SF x 1/3(SF/unit) x 2.2 x (A At + By²) <sup>1/2</sup>	386 ft. 386 ft. 2758 ft <sup>2</sup> . 277 ft <sup>2</sup> . 2758 ft <sup>2</sup> . 40 ft. 20 ft. 40 ft. 42 SF	73.3 46.3 173.7 51.0 413.7 17.0 6.4 32.0 3.1 240.0 92.4 1140.9 in <sup>2</sup> .
	,		(ASHEAE 1989, P. 23.17, EQ.33)
<u>Winter</u>	<u>Summe</u>	<u>:r</u>	
Q(cfm)= = L(0.01313 x 51 + 0.01) = L x 2.2 = 148.9 x 2.2 = 2527.6 CFM Rate = 2527.6	·	= L x 1.45 = 1146.9 x 1.45 Rate = 1665.9	
31,418 = 0.68 CFM	/SF	21,418 =	0.053CFM/SF



Space Name : Prepared By Carrier Hour	100, 102, ENGG APPL Ly Analysis	ICATIONS ( Program	ORNER CONSUL	*****	01-31-91 6100190202 Page 1 of 1
U-Value : Weight : Color :	M	Roof 0.100 M D	Glass 0.580	Building Weight Glass Factor Internal Shades	: 0.58
Lights : W/s	ft/person sqft xture Type	= 3.18	Schedule	= 1 Activity = 2 Wattage : ing	Level = 3 Mult. = 1.20
ADDITIONAL E	: 210 : 76 ********	N .0 .0 *******	F W R 242.0 C 116.0 E ********	loor Area : cof Area : urrent lements : El,	522.0 sqft Pt,In,Gr
W/sqft Total Watts Schedule No	5 =	5.00 3,025 1			
ADDITIONAL E				*****	
Area = U-Value =	66.0 s 0.200 l	sqft BTU/hr/sq:	Uncon	d. Space Temp:Cood. Space Temp:Hea	ling = 100.0 %
*************				*****	*****
Cooling Heating	: 0.05 CFI : 0.08 CFI : 0.08 CFI	M/sqft =	48		
************ADDITIONAL E			*****	*****	*****
Slab Floor Perimeter Depth	Area :	= . !	0.0 sqft 50.0 ft 0.0 ft		

Space Name												•		_		
														_	1-3	
Prepared By					CONS	UL									019	
arrier Hou	rly Ana	alysis	Prog	ram											1 1	
*****	*****	*****	****	****			***	***	* * *	***	***	***	****	**	***	***
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Space Name: 108, 110, 112, 112A 01-31-91 Prepared By : ENGG APPLICATIONS CONSUL 6100190202 'arrier Hourly Analysis Program Page 1 of 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.290 0.100 0.580 Building Weight: M
Weight: M M Glass Factor: 0.58
Color: D D Internal Shades? N People : sqft/person = 396.0 Schedule = 1 Activity Level = 3 Lights : W/sqft = 2.83 Schedule = 2 Wattage Mult. = 1.20 : Fixture Type = 3 Free-hanging \_\_\_\_\_\_ SPACE NAME = 108, 110, 112, 112A Floor Area : 792.0 sqft W Roof Area : Exposure : N W Roof Area : 684.0 Wall Area : 0.0 276.0 Current Glass Area : 0.0 192.0 Elements : El,Pt,In,Gr 684.0 sqft \*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric W/sqft = Total Watts = 5.00 3,960 Schedule No. \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Partition \_\_\_\_\_\_ 108.0 sqft Uncond. Space Temp:Cooling = 100.0 % U-Value = 0.200 BTU/hr/sqft/F Uncond. Space Temp:Heating = 90.0 % \*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration Cooling : 0.05 CFM/sqft = 42 CFM Heating : 0.08 CFM/sqft = 63 CFM Typical : 0.08 CFM/sqft = 63 CFM \*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Ground Slab Floor Area = 0.0 sqft Perimeter 36.0 ft 0.0 ft = = ' Depth \*\*\*\*\*\*\*\*\*\*\*\*

Space Name :	: 112B, 13	12C, 114, 1	L14A	_			,	01-31-9
Prepared By				L				310019020
Carrier Hour	rly Analys	sis Program	n				Pa	age 1 of
*****	*****	*****	*****		****	*****	*****	******
U-Value : Weight :	Walls	Roof	Gla					
U-Value :	0.290	0.100	0.5	80 B	uildin	g Weigh	t:	M
Weight :	M	м		G:	lass F	actor	:	0.58
Color :				I	nterna	l Shade	s ?	N
People : so	ft/persor	n = 242.	0 Sch	edule	= 1	Activi	ty Leve	el =
Tichta . W	leaft	= 1.3	28 Sch	edule	= 2	Wattao	e Mult.	= 1.2
• Fi	ivture Tvi	pe =	3 Free	-hangin	- -			
					, 			
SPACE NAME	= 112B	112C 114	1142					
SPACE NAME	- 1126,	1120, 114,	1170	Flo	or Are	a •	Δ	34.0 sqf1
	_	N		M Poo	e yans		41	12.0 BqI
Exposure		N	102	W ROO	. Alea	•	4.	18.0 sqf1
Wall Area	•	0.0						
Glass Area *******	•	0.0		.O Ele	ments	. <u>.</u>	T' LC' TI	l,GE
				****	*****	*****	*****	
ADDITIONAL E	ELEMENT -	Other Elec	ctric					
W/saft	=	4.40						
W/saft	=	4.40 2,130						
W/sqft Total Watt Schedule N	= ts = No. =	4.40 2,130						
W/sqft Total Watt Schedule N	= ts = No. =	4.40 2,130 1						
W/sqft Total Watt Schedule N	= ts = No. =	4.40 2,130 1		*****	 *****		 *****	 k******
W/sqft Total Watt Schedule N	= ts = No. =	4.40 2,130 1		 *****	 ****		*****	
W/sqft Total Watt Schedule N ******************************	ELEMENT -	4.40 2,130 1 **********************************	 ******					
W/sqft Total Watt Schedule N ************ ADDITIONAL N	= = = = = = = = = = = = = = = = = = =	4.40 2,130 1 **********************************	*****	 Uncond.	Space	Temp:C	ooling	= 100.0
W/sqft Total Watt Schedule N ************ ADDITIONAL N	= ts = 1 No. = 1 ***********************************	4.40 2,130 1 	 ****** 	Uncond.	Space Space	Temp:C	cooling	= 100.0 = 90.0
W/sqft Total Watt Schedule N ************ ADDITIONAL N Area = U-Value =	= = = = = = = = = = = = = = = = = = =	4.40 2,130 1 **********************************	****** *******	Uncond.	Space Space	Temp:C	cooling eating	= 100.0 = 90.0
W/sqft Total Watt Schedule N ************ ADDITIONAL N	= = = = = = = = = = = = = = = = = = =	4.40 2,130 1 **********************************	****** *******	Uncond.	Space Space	Temp:C	cooling eating	= 100.0 = 90.0
W/sqft Total Watt Schedule N ************ ADDITIONAL N Area = U-Value =	= ts = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. = mo. =	4.40 2,130 1 **********************************	****** sqft/F	Uncond.	Space Space	Temp:C	cooling eating	= 100.0 = 90.0
W/sqft Total Watt Schedule N *********** ADDITIONAL N Area = U-Value = ************	= 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18	4.40 2,130 1 **********************************	sqft/F	Uncond. Uncond.	Space Space 	Temp:C	cooling eating	= 100.0 = 90.0
W/sqft Total Watt Schedule N *********** ADDITIONAL N Area = U-Value = ************	= 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18	4.40 2,130 1 **********************************	sqft/F	Uncond. Uncond.	Space Space 	Temp:C	cooling eating	= 100.0 = 90.0
W/sqft Total Watt Schedule N ********** ADDITIONAL N	= 18 = 18	4.40 2,130 1 ******** Partition 0 sqft 00 BTU/hr/s ******** Infiltrat:	sqft/F ******	Uncond. Uncond.	Space Space 	Temp:C	cooling eating	= 100.0 = 90.0
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W/sqft Total Watt Schedule N ********** ADDITIONAL N Area = U-Value = ********* ADDITIONAL N Cooling Heating Typical	= 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18	4.40 2,130 1 ******** Partition 0 sqft 00 BTU/hr/s ******* Infiltrat: CFM/sqft CFM/sqft CFM/sqft	sqft/F	Uncond. Uncond. ****** 26 C 39 C 39 C	Space Space *****	Temp: C	cooling leating ******	= 100.0
W/sqft Total Watt Schedule N ********** ADDITIONAL N	= 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18	4.40 2,130 1 ******** Partition 0 sqft 00 BTU/hr/s ******* Infiltrat: CFM/sqft CFM/sqft CFM/sqft	sqft/F	Uncond. Uncond. ****** 26 C 39 C 39 C	Space Space *****	Temp: C	cooling leating ******	= 100.0
W/sqft Total Watt Schedule N **************** ADDITIONAL I Area = U-Value = ************ ADDITIONAL I Cooling Heating Typical	ELEMENT -  : 0.05 : 0.08 : ********	4.40 2,130 1 ************ Partition .0 sqft 00 BTU/hr/s ******** Infiltrat: CFM/sqft CFM/sqft CFM/sqft	sqft/F	Uncond. Uncond. ****** 26 C 39 C 39 C	Space Space *****	Temp: C	cooling leating ******	= 100.0
W/sqft Total Watt Schedule N ************ ADDITIONAL N Area = U-Value =  *********** ADDITIONAL N Cooling Heating Typical *********** ADDITIONAL N	ELEMENT -  0.05  0.08  ********************************	4.40 2,130 1 ********* Partition .0 sqft 00 BTU/hr/s ******** Infiltrat: CFM/sqft CFM/sqft CFM/sqft CFM/sqft CFM/sqft	sqft/F ****** ion = = ******	Uncond. Uncond. ******* 26 C 39 C 39 C	Space Space ***** FM FM *****	Temp: C	cooling leating ******	= 100.0
W/sqft Total Watt Schedule N *********** ADDITIONAL N Area = U-Value = ********** ADDITIONAL N Cooling Heating Typical ********** ADDITIONAL N	ELEMENT -  1 0.05  2 0.08  2 0.08	4.40 2,130 1 ********** Partition .0 sqft 00 BTU/hr/s ******** Infiltrat: CFM/sqft CFM/sqft CFM/sqft CFM/sqft CFM/sqft	sqft/F ****** ion = = ******	Uncond.  ******  26 C 39 C 39 C	Space Space ***** FM FM *****	Temp: C	cooling leating ******	= 100.0
W/sqft Total Watt Schedule N *********** ADDITIONAL N Area = U-Value = ********** ADDITIONAL N Cooling Heating Typical	= 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18	4.40 2,130 1 ********** Partition .0 sqft 00 BTU/hr/s ******** Infiltrat: CFM/sqft CFM/sqft CFM/sqft CFM/sqft Ground	sqft/F ****** ion = = ******	Uncond. Vncond. ******  26 C 39 C 39 C ******	Space Space ***** FM FM *****	Temp: C	cooling leating ******	= 100.0
W/sqft Total Watt Schedule N *********** ADDITIONAL N Area = U-Value = ********** ADDITIONAL N Cooling Heating Typical ********** ADDITIONAL N	= 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18	4.40 2,130 1 ********** Partition .0 sqft 00 BTU/hr/s ******** Infiltrat: CFM/sqft CFM/sqft CFM/sqft CFM/sqft Ground	sqft/F ****** ion = = ******	Uncond. Uncond. ******  26 C 39 C 39 C ******	Space Space ***** FM FM *****	Temp: C	cooling leating ******	= 100.0

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Space Name :								01-31	
Prepared By				SUL				6100190	
Carrier Hour	ly Analy	sis Pro	gram					age 1 c	
******	*****	****	*****	****	*****	*****	*****	*****	* *
	Walls	Roo	of G	lass					
U-Value :	0.290	0.1	00 0	.580	Buildi	ng Weigl	ht :	M	
Weight :	M		M		Glass	Factor	•		
Color :			D			al Shade			
color :	ט	•	J		THEETI	iai bhaut	•	•	
People : sq	.Et /		252 0 6	chodul.	1	Activ	ity Tev	-al =	
reobie : ad	irr/berac	)II <del>-</del> .	232.0 5	chegar.	1	. ACCIV.	rcy nev	1	2
Lights : W/	sqrt _	=	2.4/ 5	cneaur	e = 2	watta	ge muit	1	. 4
: Fi	xture Ty	rpe =	3 Fr	ee-nan	ging				
SPACE NAME	= 116	1212 1	 ว1						
SPACE NAME	- 110,	TEAN, T	~ -	,	Floor Ar	ea :	1.2	63.0 sc	ft
Function		N				a :			
Exposure							1,2	10.0 50	
Wall Area	•	354.0	2		Current			_	
Glass Area		153.0				: 1			
*****	*****	****	*****	****	*****	*****	*****	*****	* *
ADDITIONAL E									
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ADDITIONAL E		= 4	.40						
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ADDITIONAL E W/sqft Total Watt Schedule N	======================================	= 4 = 5,! =	.40 557 1 ********ion	******* Unco	******** nd. Spac	******** :e Temp:(	****** Cooling	******	 o
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ADDITIONAL E W/sqft Total Watt Schedule N ************ ADDITIONAL E Area = U-Value =	SE = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 10. = 1	4 5,! - Partit 3.0 sqft 200 BTU/	.40 557 1 ******* ion hr/sqft/ 	uncoi	******** nd. Spac	e Temp:	****** Cooling	****** = 100. = 90.	0
ADDITIONAL E  W/sqft Total Watt Schedule N  ********** ADDITIONAL E  Area U-Value =  *********** ADDITIONAL E	: 0.05	4 5,! - Partit - Partit - O Sqft	.40 557 1 ******* ion hr/sqft/ ******* ration ft =	v***** Uncor	********  nd. Spacend. Spacend.	e Temp:	****** Cooling	****** = 100. = 90.	0
ADDITIONAL E W/sqft Total Watt Schedule N ********* ADDITIONAL E  Area = U-Value =  ********** ADDITIONAL E  Cooling Heating	: 0.05	4 5,! - Partit: - Partit: - O BTU/! - ******* - Infilt: - CFM/sq:	.40 557 1 ******* ion hr/sqft/ ****** ration ft = ft =	******  Unco:  ******  6 10	*******  nd. Space  nd. Space  *******  7 CFM 1 CFM	e Temp:	****** Cooling	****** = 100. = 90.	0
ADDITIONAL E W/sqft Total Watt Schedule N ********** ADDITIONAL E Area = U-Value =	63 0.2 2.*********************************	4 5, 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	.40 557 1	****** Unco: F Unco: ******	*******  nd. Space  nd. Space  *******  7 CFM 1 CFM 1 CFM	:****** :e Temp:	****** Cooling Heating	****** = 100. = 90. *****	0 0 **
ADDITIONAL E W/sqft Total Watt Schedule N ********** ADDITIONAL E U-Value =  *********** ADDITIONAL E Cooling Heating Typical	ELEMENT -  10.05  10.05  10.05  10.05  10.05	4 5, 5 5, 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	.40 557 1 ******* ion hr/sqft/ ******* ration ft = ft = ft =	****** Unco: F Unco: ******	*******  nd. Space  nd. Space  *******  7 CFM 1 CFM 1 CFM	:****** :e Temp:	****** Cooling Heating	****** = 100. = 90. *****	0 0
ADDITIONAL E W/sqft Total Watt Schedule N ********** ADDITIONAL E Area = U-Value =	ELEMENT -  10.05  10.05  10.05  10.05  10.05	4 5, 5 5, 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	.40 557 1 ******* ion hr/sqft/ ******* ration ft = ft = ft =	****** Unco: F Unco: ******	*******  nd. Space  nd. Space  *******  7 CFM 1 CFM 1 CFM	:****** :e Temp:	****** Cooling Heating	****** = 100. = 90. *****	0 0 **
ADDITIONAL E W/sqft Total Watt Schedule N ********** ADDITIONAL E	: 0.05 : 0.08 : ******	4 5, 5, 5 5, 5 5, 5 5, 5 5, 5 5, 5 5, 5	.40 557 1 ******* ion hr/sqft/ ******* ration ft = ft = ft = *******	******  Unco F Unco ******  6 10 10 ******	********  nd. Space nd. Space *******  7 CFM 1 CFM 1 CFM	:****** :e Temp:	****** Cooling Heating	****** = 100. = 90. *****	0 0 **
ADDITIONAL E W/sqft Total Watt Schedule N ********** ADDITIONAL E  Area U-Value =  Cooling Heating Typical ********** ADDITIONAL E	: 0.05 : 0.08 : ******	= 4 = 5,! - Partit: - Partit: - O Sqft - O BTU/! - Infilt: - CFM/sq: - CFM/sq: - CFM/sq: - Ground	.40 557 1 ******* ion hr/sqft/ ****** ration ft = ft = ft = *******	******  Unco F Unco ******  6 10 10 ******	********  nd. Space nd. Space *******  7 CFM 1 CFM 1 CFM	:****** :e Temp:	****** Cooling Heating	****** = 100. = 90. *****	0 0
ADDITIONAL E W/sqft Total Watt Schedule N ********** ADDITIONAL E	: 0.05 : 0.08 : ******	4 5, 5, 5 5, 5 5, 5 5, 5 5, 5 5, 5 5, 5	.40 557 1 ******* ion hr/sqft/ ****** ration ft = ft = ft = *******	******  Unco F Unco ******  6 10 10 ******	********  nd. Space nd. Space *******  7 CFM 1 CFM 1 CFM	:****** :e Temp:	****** Cooling Heating	****** = 100. = 90. *****	0 0

		_		_			CRIPT					
Space Name										_	01-3	
Prepared B					DNSU	IL					10019	
Carrier Ho											ge 1 (	
*****						****	****	****	*****	*****	****	* * *
	Wal		Root		Gla							
	0.2	90	0.100	)	0.5	80			g Weight		M	
Weight :	1	M	M						actor		0.58	
Color :		D	D				Int	erna:	l Shades	?	N	
People : :				0.0	Sch	ıedul	.e =	1	Activit	y Leve	1 =	
Lights : \	W/sqft		= ]	1.36	Sch	nedul	.e =	2	Wattage	Mult.	= ;	1.2
: 1	Fixture	Type	=	1 )	Rece	esed	l, not	vent	ted			
SPACE NAME	= LO	BBY &	CORRII	OR								
							Floor	Area	a :	3,02	4.0 s	qft
Exposure	:		N			W	Roof :	Area	:	2,28	8.0 s	aft
Wall Area		98	3.0		345	٥.٥	Curre	nt		·		-
Glass Area		$\epsilon$					Eleme	nts	: Rf	,Gl,Wl	.In.G	r
*****			****	****			****			*****		
ADDITIONAL	ELEMEN	T - Rc	of									
Weight	=	м	(lb/s	aceft \			Color		=		D	
U-Value			BTU/I						=	760	.0 sq:	f+
					,-							 
U-Value Glass Fac Internal		=	0.90 N	БІО/І	.IL / B	,drc)		ea	re = ,		S 6.0 s	qft
****	*****	***** T - Wa	:***** ill	****	****	****	****	****	*****	*****	****	***
ADDITIONAL	ELEMEN											
			·									
Weight	ELEMEN		(1b/s	 :qft)			Exposi				s	<b>-</b> 1
Weight Color	=	D	)				Exposi Net A			 98	.0 sq:	ft
Weight	=	D					_			98		ft
Weight Color	=	D	)				_			98		ft 
Weight Color U-Value	= = = ******	0.290 	) BTU/i	nr/sq:			_			98  *****		ft  ***
Weight Color	= = = ******	0.290 	) BTU/i	nr/sq:			_			98  *****		ft  ***
Weight Color U-Value	= = = ******	0.290  ***** T - In	BTU/E	nr/sq	ft/F  ****	****	Net A:			98  *****		ft  ***
Weight Color U-Value ADDITIONAL Cooling	= = = ****** ELEMEN : 0	0.290 ***** T - In	D BTU/P	nr/sq:	ft/F  ****	16	Net A			98  *****		ft  ***
Weight Color U-Value ADDITIONAL Cooling	= = = ****** ELEMEN : 0	0.290 ***** T - In	D BTU/P	nr/sq:	ft/F  ****	16	Net A			98  *****		ft  ***
Weight Color U-Value	= = = ****** ELEMEN : 0	0.290 ***** T - In	D BTU/P	nr/sq:	ft/F  ****	16	Net A			98  *****		ft  ***
Weight Color U-Value ********** ADDITIONAL Cooling Heating Typical	= = = ****** ELEMEN : 0 : 0	0.290 ****** T - In .05 CF .08 CF	D BTU/N	nr/sq:	ft/F	16 24 24	Net A: ***** O CFM 2 CFM 2 CFM	rea *****	=		.0 sq:	***
Weight Color U-Value ADDITIONAL Cooling	= = = ****** ELEMEN' : 0 : 0	0.290 ****** T - In .05 CF .08 CF	D BTU/I	nr/sq:	ft/F	16 24 24	Net A: ***** O CFM 2 CFM 2 CFM	rea *****	=		.0 sq:	***
Weight Color U-Value ************************************	= = = = = = = = = = = = = = = = = = =	0.290 ****** T - In .05 CF .08 CF .08 CF	D BTU/I	nr/sq:	ft/F	16 24 24	Net A: *****  O CFM 2 CFM 2 CFM ****	rea *****	=		.0 sq:	***
Weight Color U-Value  ********** ADDITIONAL  Cooling Heating Typical  **********	= = = = = = = = = = = = = = = = = = =	0.290 ***** T - In .05 CF .08 CF .08 CF	D BTU/I	nr/sq:	ft/F	16 24 24 :****	Net A: *****  O CFM 2 CFM 2 CFM ****	rea *****	=		.0 sq:	***
Weight Color U-Value  ********** ADDITIONAL  Cooling Heating Typical  ********** ADDITIONAL	= = = = = = = = = = = = = = = = = = =	0.290 ****** T - In .05 CF .08 CF .08 CF	D BTU/h	nr/sq: ***** ation = = = = = = = = = = = = = = = = = = =	ft/F ****  ****	16 24 24 24 ****	Net A: *****  O CFM 2 CFM 2 CFM ****	rea *****	=		.0 sq:	***

SIMPLE SPACE DESCRIPT	
Space Name : 116, 118, 120	01-31-91
Prepared By : ENGG APPLICATIONS CONSUL	6100190202
arrier Hourly Analysis Program	Page 1 of 1
*******	*****
Walls Roof Glass	
	.lding Weight : M
	ass Factor : 0.58
Color : D D Int	ernal Shades ? N
People : sqft/person = 191.0 Schedule =	1 Activity Level = 3
Lights: W/sqft = 1.88 Schedule =	2 Wattage Mult. = 1.20
: Fixture Type = 3 Free-hanging	•
SPACE NAME = 116, 118, 120 Floor	Area : 765.0 sqft
	Area : 765.0 sqft
Wall Area : 234.0 354.0 Curre	
Glass Area : 0.0 153.0 Eleme	ents : El,In,Gr
**********	******
ADDITIONAL ELEMENT - Other Electric	
W/sqft = 4.40	
Total Watts = 3,366	
Schedule No. = 1	
********	***********
ADDITIONAL ELEMENT - Infiltration	
Cooling : 0.05 CFM/sqft = 41 CFM	
Cooling: 0.05 CFM/sqft = 41 CFM Heating: 0.08 CFM/sqft = 61 CFM	
HEATING : U.UD CEM/BUIL - UI CEM	
Typical : 0.08 CFM/sqft = 61 CFM	
Typical : 0.08 CFM/sqft = 61 CFM	 
Typical : 0.08 CFM/sqft = 61 CFM  ***********************************	*******
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											01-31-9
Space Name :										-	
Prepared By				CONSU:	L						0019020
Carrier Hour	ly Analy	sis Pro	gram								e 1 of
*****	*****			****	****	*****	***	****	****	****	*****
	Walls	Ro	of	Gla	.88						
U-Value :	0.290			0.5	80	Buil	ding	Weig!	ht	:	M
Weight :	М		M			Glas	s Fa	ctor		: 0.	.58
Color :	D		D					Shade			
People : so	ft/perso	on =	0.0	Sch	edule	<b>=</b>	1	Activ	itv L	evel	=
People : sq Lights : W/	eaft	=	2.30	Sch	edule	· =	2	Watta	ge Mu	lt.	= 1.2
. Fi	xture Ty	me =	3	Free	-hanc	rina	_		<b>9</b>		
	.xcure ij	. Pc -				,					
SPACE NAME	_ 124										
SPACE NAME	= 124					21	3			410	.0 sqf1
<u></u>		••									
Exposure	:	W 170.0						:		352	.0 sqft
··						urren		_			_
Glass Area	:	78.0		0	.0 E	Elemen	its	: 1	El,Pt	,In,	3r
*****					****	****	***	****	****	****	*****
ADDITIONAL E	LEMENT -	- Other	Electi	ric							
**/											
W/sqft		= 5	.00								
W/sqft Total Watt	 :	= 5 = 2,	.00 090								
W/sqft Total Watt Schedule N	s =	= 5 = 2,	00 090 1								
W/sqft Total Watt	S = 10.	= 5 = 2, = 	.00 090 1		****		***	****	 ****	****	****
W/sqft Total Watt Schedule N	#*************************************	5 2, 5 2, 6 2, 7 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	.00 090 1 .****	****	 Uncor	nd. Sp	ace	Temp:	 Cooli	 .ng =	100.0
W/sqft Total Watt Schedule N ************* ADDITIONAL E	#*************************************	= 5 = 2, = *******	.00 090 1 .****	****	 Uncor	nd. Sp	ace	Temp:	 Cooli	 .ng =	100.0
W/sqft Total Watt Schedule N ********* ADDITIONAL E Area = U-Value =	#*************************************	5 2,	.00 090 1 ***** ion	**** ft/F	uncon	nd. Sp	ace	Temp:	 Cooli Heati	.ng = .ng =	100.0
W/sqft Total Watt Schedule N ********** ADDITIONAL E Area = U-Value =	######################################	= 2, = 2, =	.00 090 1 .***** ion hr/sq:	***** ft/F !	uncon	nd. Sp	ace	Temp:	 Cooli Heati	.ng = .ng =	100.0
W/sqft Total Watt Schedule N ********* ADDITIONAL E Area = U-Value =	######################################	= 2, = 2, =	.00 090 1 .***** ion hr/sq:	***** ft/F !	uncon	nd. Sp	ace	Temp:	 Cooli Heati	.ng = .ng =	100.0
W/sqft Total Watt Schedule N  ********* ADDITIONAL E  Area = U-Value =  ********** ADDITIONAL E	######################################	5 2, 5 2, 6 2, 7 2 2, 7 3 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	.00 090 1 .***** ion 	***** ft/F !	Uncor	nd. Sp	ace	Temp:	 Cooli Heati	.ng = .ng =	100.0
W/sqft Total Watt Schedule N  ********* ADDITIONAL E  Area = U-Value =  ********** ADDITIONAL E	######################################	5 2, 5 2, 6 2, 7 2 2, 7 3 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	.00 090 1 .***** ion 	***** ft/F !	Uncor	nd. Sp	ace	Temp:	 Cooli Heati	.ng = .ng =	100.0
W/sqft Total Watt Schedule N  ********* ADDITIONAL E  Area = U-Value =  ********** ADDITIONAL E  Cooling Heating	######################################	2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2	.00 090 1 ***** ion hr/sq: **** ration	ft/F ?	Uncon Uncon *****	nd. Sp	ace	Temp:	 Cooli Heati	.ng = .ng =	100.0
W/sqft Total Watt Schedule N  ********* ADDITIONAL E  Area = U-Value =  ********* ADDITIONAL E  Cooling Heating Typical	######################################	2, 2, 2, 2, 2, 3.0 sqft 200 BTU/ 3.0 sqft 200 BTU/ 5.************************************	.00 090 1 .***** ion 	***** ft/F :	Uncon Uncon ****** 22 33	nd. Sp nd. Sp ******	ace ace ****	Temp:	Cooli Heati	.ng = .ng = .****	100.0
W/sqft Total Watt Schedule N  ********* ADDITIONAL E  Area = U-Value =  ********** ADDITIONAL E  Cooling Heating	######################################	2, 2, 2, 2, 2, 3.0 sqft 200 BTU/ 3.0 sqft 200 BTU/ 5.************************************	.00 090 1 .***** ion 	***** ft/F :	Uncon Uncon ****** 22 33	nd. Sp nd. Sp ******	ace ace ****	Temp:	Cooli Heati	.ng = .ng = .****	100.0
W/sqft Total Watt Schedule N  **********  ADDITIONAL E	######################################	2,	.00 090 1 *****ion hr/sq: *****iration [ft = [ft =	ft/F :	22 33 33	nd. Sp nd. Sp ******	ace ace ****	Temp:	Cooli Heati	.ng = .ng = .****	100.0
W/sqft Total Watt Schedule N  ********** ADDITIONAL E	######################################	2,	.00 090 1 .***** ion .hr/sq: .**** ratio: .ft = .ft = .ft =	****  ft/F 1	22 33 33	nd. Sp nd. Sp ******	ace ace ****	Temp:	Cooli Heati	.ng = .ng = .****	100.0
W/sqft Total Watt Schedule N  ********** ADDITIONAL E	######################################	2, e 2, e 2, e 2, e 2, e 2, e 2, e 2, e	1 	***** ft/F 1	Uncon Uncon ***** 22 33 33 *****	nd. Sp nd. Sp ******	ace ace ****	Temp:	Cooli Heati	.ng = .ng = .****	100.0
W/sqft Total Watt Schedule N  ********** ADDITIONAL E	######################################	2,	.00 090 1 .**** ion 	****  ft/F 1	Uncon Uncon ***** 22 33 33 *****	nd. Sp nd. Sp ******	ace ace ****	Temp:	Cooli Heati	.ng = .ng = .****	100.0

01-31-91 Space Name: 124A, 126 6100190202 Prepared By : ENGG APPLICATIONS CONSUL Page 1 of 1 Carrier Hourly Analysis Program Walls Roof Glass
U-Value: 0.290 0.100 0.580
Weight: M M
Color: D D \*\*\*\*\*\*\*\*\*\*\*\*\*\* Building Weight : M Glass Factor : 0.58 Internal Shades ? N People : sqft/person = 0.0 Schedule = 1 Activity Level = 3 Lights : W/sqft = 2.72 Schedule = 2 Wattage Mult. = 1.20 : Fixture Type = 3 Free-hanging SPACE NAME = 124A, 126Floor Area : 412.0
Exposure : W S Roof Area : 364.0
Wall Area : 210.0 0.0 Current
Glass Area : 76.0 0.0 Elements : El,Pt,In,Gr Floor Area : 412.0 sqft 364.0 sqft \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric = 5.00 2,060 = Total Watts Schedule No. \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Partition 48.0 sqft Uncond. Space Temp:Cooling = 100.0 % U-Value = 0.200 BTU/hr/sqft/F Uncond. Space Temp:Heating = 90.0 % \_\_\_\_\_ \*\*\*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration 

 Cooling
 : 0.05 CFM/sqft =
 22 CFM

 Heating
 : 0.08 CFM/sqft =
 33 CFM

 Typical
 : 0.08 CFM/sqft =
 33 CFM

 ADDITIONAL ELEMENT - Ground 0.0 sqft Slab Floor Area Perimeter 16.0 ft = = 0.0 ft Depth

Space Name :			E SPACE					
•	: 128							01-31-91
Prepared By				ΙL				00190202
Carrier House	rly Analys.	is Progra	m				Page	e 1 of 1
******	k*****	******	*****	*****	*****	*****	*****	*****
	Walls	Roof	Gla	188				
U-Value :	0.290	0.100	0.5	80	Buildir	g Weight	:	M
Weight :	M	м			Glass F	actor	: 0	.58
Color :	D	D			Interna	l Shades	?	N
••••								
People : so	aft/person	= 0	.0 Sch	nedule	= 1	Activity	y Level	= ;
Lights : W	/saft	= 2.	65 Sch	edule	= 2	Wattage	Mult.	= 1.20
. F:	ixture Typ	e = -·	3 Free	-hang	ing _	_		
		- 						
SPACE NAME	= 128							
DIACH NAME	- 110			F.	oor Are	ea :	242	.0 saft
Exposure	•	พ			of Area		209	
		05.0	•		rrent	•	203	
Wall Area		38.0				: E1	Dt In (	7. r
Glass Area ********		38.U		/.U E.	rements		, 2 6 , 111 , \	31 ******
ADDITIONAL I								
W/sqft	=							
Total Watt	ts =							
Schedule 1	No. =	1						
*****				*****	*****	****	*****	*****
ADDITIONAL I	ELEMENT - :	Partition						
								100 0
Area =	33.	O sqit	a	Uncond	. Space	Temp:Co	oling =	100.0
Area = U-Value =	33. 0.20	O sqit O BTU/hr/	sqft/F	Uncond	d. Space d. Space	Temp:Co	oling = ating =	90.0
U-Value =	0.20	O BTU/hr/	sqft/F	Uncon	d. Space	Temp:He	ating =	90.0
U-Value =	0.20	0 BTU/hr/  ******	sqft/F  ******	Uncon	d. Space	Temp:Coc	ating =	90.0
U-Value =	0.20	0 BTU/hr/  ******	sqft/F  ******	Uncon	d. Space	Temp:He	ating =	90.0
U-Value =  ************ ADDITIONAL I	0.20 ******* ELEMENT -	O BTU/hr/  ******* Infiltrat	sqft/F  ****** ion	Uncond	d. Space	Temp:He	ating =	90.0
U-Value =  *********  ADDITIONAL I  Cooling	0.20 ******* ELEMENT - : 0.05	O BTU/hr/  ******** Infiltrat  CFM/sqft	sqft/F  ****** ion 	Uncon	d. Space	Temp:He	ating =	90.0
U-Value =  *********  ADDITIONAL I  Cooling	0.20 ******* ELEMENT - : 0.05	O BTU/hr/  ******** Infiltrat  CFM/sqft	sqft/F  ****** ion 	Uncond ******	d. Space	Temp:He	ating =	90.0
U-Value =  *********  ADDITIONAL I  Cooling	0.20  ******  ELEMENT -  : 0.05  : 0.08	O BTU/hr/  ******** Infiltrat  CFM/sqft	sqft/F  ****** ion 	13 19	d. Space	Temp:He	ating =	90.0
U-Value =  *********  ADDITIONAL I  Cooling Heating Typical	0.20  ******  ELEMENT -  : 0.05  : 0.08  : 0.08	O BTU/hr/ ******** Infiltrat CFM/sqft CFM/sqft	sqft/F  ****** ion  = = =	13 19 19	CFM CFM	******	ating =  *******	90.0
U-Value =	0.20  ******  ELEMENT -  : 0.05  : 0.08  : 0.08	O BTU/hr/ ******** Infiltrat CFM/sqft CFM/sqft	sqft/F  ****** ion  = = =	13 19 19	CFM CFM	******	ating =  *******	90.0
U-Value =  *********  ADDITIONAL I  Cooling Heating Typical	0.20  *******  ELEMENT -  : 0.05 : 0.08 : 0.08	O BTU/hr/ ******** Infiltrat CFM/sqft CFM/sqft CFM/sqft	sqft/F  ****** ion  = = =	13 19 19	CFM CFM	******	ating =  *******	90.0
U-Value =  *************  ADDITIONAL I  Cooling Heating Typical  ***********************************	0.20  *******  ELEMENT -  : 0.05 : 0.08 : 0.08	O BTU/hr/ ******** Infiltrat CFM/sqft CFM/sqft CFM/sqft	sqft/F  ****** ion  = = =	13 19 19	CFM CFM	******	ating =  *******	90.0
U-Value =  **********  ADDITIONAL I  Cooling Heating Typical  ************  ADDITIONAL I	0.20  ******  ELEMENT -  : 0.05  : 0.08  : 0.08	O BTU/hr/ ******** Infiltrat CFM/sqft CFM/sqft CFM/sqft	sqft/F 	13 19 19	CFM CFM	******	ating =  *******	90.0
U-Value =  ***********  ADDITIONAL I  Cooling Heating Typical  ***********  ADDITIONAL I	0.20  ******  ELEMENT -  : 0.05  : 0.08  : 0.08	O BTU/hr/	sqft/F ****** ion = = = = ******	13 19 19	CFM CFM	******	ating =  *******	90.0
U-Value =  **********  ADDITIONAL I  Cooling Heating Typical  ************  ADDITIONAL I	0.20  ******  ELEMENT -  : 0.05  : 0.08  : 0.08	O BTU/hr/	sqft/F 	Uncond ******* 13 19 19 ******	CFM CFM	******	ating =  *******	90.0

: 130								
								1-31-9
: ENGG AP	PLICATIO	ns cons	UL					019020
rly Analys	is Progr	am				F	age	1 of
*****	******	*****	*****	*****	*****	*****	***	****
Walls	Roof	Gl	ass					
0.290	0.100	0.	580	Build	ing Weig	ht :		М
				Glass	Factor	•	0.5	58
_	_			<b>5</b>				
rft/nerson	= (	0.0 Sc	hedule	_	1 Activ	ity Lev	re1	=
irc/person /eaft	= 2	.65 Sc	hedule	_	2 Watta	ce Mult		= 1.2
ivture Tun		3 Fre	o-hanc	ina	L Macco	.gca	• •	
rycare lyb		J FIE		1119				
- 120								
= 130						-	12 (	) =~f+
_	*.3							
:			4 6	OOI Ar	±4 :	2	.07.0	, adir
: 1		(	0.0	urrent				
		,	0.0 E	Tement	B :			
*****	****	*****	****	****	*****	*****	***	*****
	-							
10. =		1						
PT EMENT		~						
ELEMENT -	Partitio:	n 						
			Uncor	d. Spa	ce Temp:	Cooling	· 7 = 1	100.0
33.	 0	~~~~	Uncor	d. Spa	ce Temp:	 Cooling	 ; = 1 ; =	 100.0 90.0
	 0	~~~~	Uncor	d. Spa	ce Temp:	Heating	<b>,</b> =	100.0
33.	0 sqft 0 BTU/hr	/sqft/F	Uncor	d. Spa	ce Temp:	Heating	j = 	90.0
33. 0.20	O sqft O BTU/hr	/sqft/F	Uncor	d. Spa	ce Temp:	Heating	j = 	90.0
33. 0.20	O sqft O BTU/hr	/sqft/F	Uncor	d. Spa	ce Temp:	Heating	j = 	90.0
33. 0.20 ******** ELEMENT -	0 sqft 0 BTU/hr 	/sqft/F  ****** tion 	Uncor ******	d. Space	ce Temp:	Heating	j = 	90.0
33. 0.20 ********	0 sqft 0 BTU/hr 	/sqft/F  ****** tion 	Uncor ******	d. Spa	ce Temp:	Heating	j = 	90.0
	Walls 0.290  M D  Ift/person Sqft  Exture Typ  = 130  : : : : : : : : : : : : : : : : : :	### Analysis Progr ###################################	### Analysis Program ####################################	Tly Analysis Program  ***********************************	### Analysis Program ####################################	Thy Analysis Program  ***********************************	### Analysis Program  Walls Roof Glass  0.290	Page Walls Roof Glass 0.290 0.100 0.580 Building Weight : I M M Glass Factor : 0.5 D D Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  Internal Shades ?  In

			SPACE DES			
Space Name :	132, 132	2A, 130A, 1	34A			01-31-9
Prepared By						610019020
Carrier Hour						Page 1 of
		*****		******	*****	******
	Walls	Roof	Glass			
U-Value :	0.290	0.100	0.580	Building	g Weight	: M
Weight :	м	М			actor	
Color :	D.	D				? N
	,	•		2		• •
People : sq	ft /nergor	n = 145.0	O Schedul	e = 1	Activity	/ Level =
Lights : W/s				e = 2		Mult. = 1.2
	sqic xture Typ		3 Free-han		naccage	
: F1	xcure Tyl	.e	o riee-man	91119		
SPACE NAME	= 132	1302 1302	1342			
SPACE NAME	- 152, .	13211, 13011,		Floor Area	a •	506.0 sqft
E	_	W		Roof Area		437.0 sqft
Exposure Wall Area			0.0		•	457.0 541.0
					. 191	Dt 1: To Co
Glass Area	•	76.0		Frements	: E1,	Pt,Li,In,Gr
*****	*****	*****		****	****	
ADDITIONAL E	LEMENT -	Other Elec	tric			
		4 40				
W/sqft		4.40				
Total Watt		•				
Schedule N	o. =	1				
ADDITIONAL E	LEMENT -	Partition				
************ ADDITIONAL E  Area = U-Value =	LEMENT -	Partition 	Unco	nd. Space	Temp: Cod	oling = 100.0
ADDITIONAL E	69. 0.20	Partition O sqft DO BTU/hr/s	Unco	nd. Space	Temp: Cod	oling = 100.0
Area = U-Value =	69 0.20	Partition O sqft O BTU/hr/s	Unco	nd. Space	Temp: Cod	oling = 100.0
ADDITIONAL E	69 0.20	Partition O sqft O BTU/hr/s	Unco	nd. Space	Temp: Cod	oling = 100.0
Area = U-Value = ***********************************	69. 0.20	Partition O sqft DO BTU/hr/s	Unco qft/F Unco	nd. Space	Temp: Coo	oling = 100.0 ating = 90.0
Area = U-Value = ***********************************	69. 0.20 *********************************	Partition O sqft DO BTU/hr/s ********* Lights 0.40	Unco qft/F Unco ********	and. Space and. Space ************************************	Temp: Coo	oling = 100.0 ating = 90.0
Area = U-Value = ***********************************	69. 0.20 *********************************	Partition O sqft D BTU/hr/s ******** Lights 0.40 200	Unco qft/F Unco ******** Schedul Wattage	ond. Space ond. Space ond. Space ond. Space	Temp: Coo	oling = 100.0 ating = 90.0
Area = U-Value = ***********************************	69. 0.20 *********************************	Partition O sqft D BTU/hr/s ******** Lights 0.40 200	Unco qft/F Unco ********	ond. Space ond. Space ond. Space ond. Space	Temp: Coo	oling = 100.0 ating = 90.0
Area = U-Value = ***********************************	69. 0.20 *********************************	Partition O sqft D BTU/hr/s ******** Lights 0.40 200	Unco qft/F Unco ******** Schedul Wattage	ond. Space ond. Space ond. Space ond. Space	Temp: Coo	oling = 100.0 ating = 90.0
Area = U-Value = ***********************************	69. 0.20 *********************************	Partition  .0 sqft  .0 BTU/hr/s  *********  Lights  0.40  200  1	Unco qft/F Unco ******** Schedul Wattage (Recessed,	ond. Space ond. Space ond. Space ond. Space	Temp: Coo	oling = 100.0 ating = 90.0
Area = U-Value = ***********************************	69. 0.20 *********************************	Partition  .0 sqft  .0 BTU/hr/s  *********  Lights  0.40  200  1	Unco qft/F Unco ******** Schedul Wattage (Recessed,	ond. Space ond. Space ond. Space ond. Space	Temp: Coo	oling = 100.0 ating = 90.0
Area = U-Value = ***********************************	69. 0.20 ******* LEMENT - = s = pe = ********	Partition O sqft DO BTU/hr/s ******** Lights  0.40 200 1 ********** Infiltration	Unco qft/F Unco ********* Schedul Wattage (Recessed,	e No. Multiplication wenter	Temp: Coo	oling = 100.0 ating = 90.0
Area = U-Value = ***********************************	LEMENT -  69. 0.20  *******  LEMENT -  = pe =  ********  LEMENT -  : 0.05	Partition O sqft DO BTU/hr/s ******** Lights  0.40 200 1 ********* Infiltration	Unco qft/F Unco ********* Schedul Wattage (Recessed,	e No. Multiplication of ventors  ***********************************	Temp: Coo	oling = 100.0 ating = 90.0
ADDITIONAL EXAMPLE Area = U-Value = Area = U-Value = Area	69: 0.20 ******* LEMENT - = pe = ******* LEMENT - : 0.05 : 0.08	Partition O sqft O BTU/hr/s ******* Lights  0.40 200 1 ******** Infiltration	Unco qft/F Unco ********* Schedul Wattage (Recessed,	e No. Multiplic not vente	Temp: Coo	oling = 100.0 ating = 90.0
Area = U-Value = ***********************************	69: 0.20 ******* LEMENT - = pe = ******* LEMENT - : 0.05 : 0.08	Partition O sqft DO BTU/hr/s ******** Lights  0.40 200 1 ********* Infiltration	Unco qft/F Unco ********* Schedul Wattage (Recessed,	e No. Multiplication of ventors  ***********************************	Temp: Coo	oling = 100.0 ating = 90.0
Area = U-Value =  ***********  ADDITIONAL E  W/sqft Total Watt Fixture Ty  *********  ADDITIONAL E  Cooling Heating Typical	69. 0.20 ******* LEMENT - = pe = ******* LEMENT - : 0.05 : 0.08 : 0.08	Partition O sqft O BTU/hr/s ******** Lights  0.40 200 1 ******** Infiltration CFM/sqft CFM/sqft	Unco qft/F Unco ********* Schedul Wattage (Recessed, ********	e No. Multiplic not vente  *********  7 CFM 0 CFM	Temp: Coo Temp: Hea	oling = 100.0 ating = 90.0 ***********************************
Area = U-Value =  ***********  ADDITIONAL E  W/sqft Total Watt Fixture Ty  *********  ADDITIONAL E  Cooling Heating Typical	LEMENT -  69 0.20  ********  LEMENT -  = pe =  ********  LEMENT -  : 0.05 : 0.08 : 0.08	Partition O sqft O BTU/hr/s ******** Lights  0.40 200 1 ********* Infiltrati CFM/sqft CFM/sqft CFM/sqft	Unco qft/F Unco ********* Schedul Wattage (Recessed, ********	e No. Multiplic not vente  *********  7 CFM 0 CFM	Temp: Coo Temp: Hea	oling = 100.0 ating = 90.0 ***********************************
Area = U-Value = ***********************************	LEMENT -  69. 0.20  ********  LEMENT -  = pe =  *******  LEMENT -  : 0.05 : 0.08 : 0.08 : 0.08	Partition O sqft O BTU/hr/s ******** Lights  0.40 200 1 ******** Infiltrati CFM/sqft CFM/sqft CFM/sqft CFM/sqft ********* Ground	Unco qft/F Unco ************ Schedul Wattage (Recessed, ***********	e No. Multiplication of venters  7 CFM 0 CFM 0 CFM	Temp: Coo Temp: Hea	oling = 100.0 ating = 90.0 ***********************************
Area = U-Value = ***********************************	LEMENT -  69. 0.20  ********  LEMENT -  = pe =  *******  LEMENT -  : 0.05 : 0.08 : 0.08 : 0.08	Partition O sqft O BTU/hr/s ******** Lights  0.40 200 1 ******** Infiltrati CFM/sqft CFM/sqft CFM/sqft CFM/sqft CFM/sqft	Unco qft/F Unco ************ Schedul Wattage (Recessed, ************************************	e No. Multiplication of venters  7 CFM 0 CFM 0 CFM	Temp: Coo Temp: Hea	
Area = U-Value = ***********************************	LEMENT -  69. 0.20  ********  LEMENT -  = pe =  *******  LEMENT -  : 0.05 : 0.08 : 0.08 : 0.08	Partition O sqft O BTU/hr/s ******** Lights  0.40 200 1 ******** Infiltrati CFM/sqft CFM/sqft CFM/sqft CFM/sqft ********* Ground	Unco qft/F Unco ************ Schedul Wattage (Recessed, ************ on	e No. Multiplication of venters  7 CFM 0 CFM 0 CFM	Temp: Coo Temp: Hea	oling = 100.0 ating = 90.0 ***********************************

O Wome	124 12	AD 126			•	0	1-31-9
Space Name :			e conciit			_	019020
Prepared By							1 of
Jarrier Hour			::: ******				
****	Walls	Roof	Glass				
** *** *** ·		0.100		Post latina	g Weight	:	M
U-Value:	0.290		0.560		g werght actor		
Weight :	М	M D			l Shades		N N
Color :	D	ט		Interna.	I Shades	*	14
People : sq	ft/perso	n = 145	.0 Schedu	e = 1	Activity	Level	=
Lights : W/	saft	= 2.5	20 Schedul	le = 2	Wattage	Mult.	= 1.2
: Fi	xture Ty	pe =	3 Free-har	nging			
SPACE NAME		134B 136					
SPACE NAME	- 134,	1346, 130		Floor Area	a :	594.	0 sqft
Exposure	:	W	s	Roof Area		513.	_
Wall Area		275.0	247.0	Roof Area Current			-
Glass Area		76.0	39.0	Elements	: El,	Pt,In,G	r
*****		*****	*****	****			
ADDITIONAL E	LEMENT -	Other Elec	ctric				
W/sqft	=	5.00					
Total Watt	.s =	2,970					
Schedule No	io. =	1					
*************** ADDITIONAL E			***********	*****	*****	******	*****
	0.1	.0 sqft	Unco	ond. Space	Temp: Coo	ling =	100.0
Area = U-Value =	0.2	00 BTU/hr/s	sqft/F Unco	ond. Space	Temp:Hea	ting =	90.0
U-Value =	0.2	******	******		Temp:Hea		
U-Value =  *********  ADDITIONAL E  Cooling	0.2 ******* LEMENT -	********* Infiltrat	****************		Temp:Hea		
U-Value =  ********* ADDITIONAL E:  Cooling Heating	0.2 ****** *** ** ** ** ** ** ** * * * *	*********  Infiltrat:  CFM/sqft  CFM/sqft	************* ion = 3	31 CFM 88 CFM	Temp:Hea		
U-Value =  **********  ADDITIONAL E	0.2 ****** *** ** ** ** ** ** ** * * * *	********* Infiltrat	************* ion = 3	**************************************	Temp:Hea		
U-Value =  ************* ADDITIONAL E  Cooling Heating Typical	0.2 ******* ******* *******	*********  Infiltrat:  CFM/sqft  CFM/sqft  CFM/sqft  **********	**************************************	31 CFM 88 CFM 88 CFM	Temp: Hea	*****	*****
U-Value =  ************* ADDITIONAL E  Cooling Heating Typical	0.2  ****** ** ** ** ** ** ** ** ** ** **	*********  Infiltrat:  CFM/sqft  CFM/sqft  CFM/sqft  **********	**************************************	31 CFM 88 CFM 88 CFM	Temp: Hea	*****	*****
U-Value =  **********  ADDITIONAL E  Cooling Heating Typical  *********  ADDITIONAL E  Slab Floor	0.2 ****** ***** : 0.05 : 0.08 : 0.08 : ****** ** ** ** ** ** ** ** ** ** ** **	********  Infiltrat: CFM/sqft CFM/sqft CFM/sqft **********	**************************************	31 CFM 88 CFM 88 CFM	Temp: Hea	*****	*****
U-Value =  **********  ADDITIONAL E  Cooling Heating Typical  ***********  ADDITIONAL E	0.2 ****** ***** : 0.05 : 0.08 : 0.08 : ****** ** ** ** ** ** ** ** ** ** ** **	********  Infiltrat:  CFM/sqft  CFM/sqft  CFM/sqft  *********  Ground	*************  0.0 sqft	31 CFM 88 CFM 88 CFM	Temp: Hea	*****	*****

		ME CURNE									01-31-
Space Name :				CONCI	17						001902
Prepared By				CONST	ידר						
Carrier Hour	ciy Ana.	LYSIS Pr	ogram								e 1 of
*****						****	***				
	Walls		oof	Gla			<b>.</b>		1. 4.	_	v
U-Value :	0.29		100	0.5	580			y Weig			
Weight :	M		M					actor			
Color :	D		D			Int	erna:	l Shad	les	?	N
People : so	gft/per	son =	0.0	Sch	nedul	e =	1	Activ	ity I	Level	=
Lights : W/	/sqft	=	2.65	Sch	nedul	e =	2	Watta	ige Mi	ılt.	= 1.
: Fi	xture !	Type =	3	Free	∍-han	ging					
SPACE NAME	= 101	NE COR	 NER								
											.0 sqf
Exposure	:	E			N	Roof Curre	Area	:		418	.0 sqf
Wall Area	:	210.0		210	0.0	Curre	nt				
Glass Area	-	76.0		, ,		to Teme	11.00	:			
*****	*****	*****	****	****	****	****	****	****	****	****	****
ADDITIONAL E		- Other		ric							
W/sqft		=	7.00								
		=									
W/sqft Total Watt Schedule N	.s 	= = 3 =	7.00 ,388 1								
W/sqft Total Watt Schedule N ************ ADDITIONAL E	So.	= 3 =	7.00 ,388 1  ****** tion		Unco	 nd. S	 pace	Temp:	Cooli	 ing =	100.0
W/sqft Total Watt Schedule N ************ ADDITIONAL E	ELEMENT	= 3 =	7.00 ,388 1 	 ft/F	Unco Unco	nd. S	pace	Temp:	Cooli Heati	ing =	100.0
W/sqft Total Watt Schedule N *********** ADDITIONAL E Area = U-Value =	ELEMENT	= 3 = ******* - Parti 	7.00 ,388 1 ****** tion t /hr/sq	ft/F 	Unco Unco	nd. S	pace	Temp:	Cooli Heati	ing =	100.0
W/sqft Total Watt Schedule N ********** ADDITIONAL E Area = U-Value = *********** ADDITIONAL E	CLEMENT  CLEMENT  CLEMENT  CLEMENT  CLEMENT  CLEMENT  CLEMENT	= 3 = 3 ******* - Parti 	7.00 ,388 1 ****** tion t /hr/sq: ttration qft =	ft/F  *****	Unco Unco	nd. S	pace pace ****	Temp:	Cooli Heati	ing =	100.0
W/sqft Total Watt Schedule N ********** ADDITIONAL E Area = U-Value = ************* ADDITIONAL E	CLEMENT O. CLEMENT O. CLEMENT O. CLEMENT O. CLEMENT O. CLEMENT	= 3 = 3 	7.00 ,388 1 ***** tion t /hr/sq ***** tration qft = qft =	ft/F ***** n	Unco Unco ****	nd. S nd. S	pace pace ****	Temp:	Cooli Heati	ing =	100.0
W/sqft Total Watt Schedule N ********** ADDITIONAL E  Area = U-Value =  ************ ADDITIONAL E	CLEMENT CLEMENT CLEMENT CLEMENT CLEMENT CLEMENT CLEMENT	= 3 = 3 ******* - Parti 	7.00 ,388 1 ***** tion t /hr/sq ***** tration qft = qft =	ft/F ***** n	Unco Unco	nd. S nd. S ****	pace pace  ****	Temp:	Cooli Heati	ing =	100.0
W/sqft Total Watt Schedule N ********* ADDITIONAL E  Area = U-Value =  ********** ADDITIONAL E  Cooling Heating Typical	CLEMENT  CLEMENT  CLEMENT  CLEMENT  CLEMENT  CLEMENT  CLEMENT	= 3 = 3 	7.00 ,388  1 ***** tion t /hr/sq ***** tration qft = qft =	ft/F *****	Unco Unco ***** 2 3	nd. s nd. s ***** 6 CFM 9 CFM	pace pace  *****	Temp: Temp: *****	Cooli	ing =	100.0
W/sqft Total Watt Schedule N ************ ADDITIONAL E Area = U-Value = *********** ADDITIONAL E Cooling Heating Typical	ELEMENT  : 0.0 : 0.0	= 3 = 3 	7.00 ,388 1 ttion thr/sq tration qft = qft = qft =	ft/F	Unco Unco *****	nd. S nd. S ***** 6 CFM 9 CFM 9 CFM *****	 pace pace *****	Temp: Temp:	Cooli Heati *****	ing = ing =	100.0
W/sqft Total Watt Schedule N ************ ADDITIONAL E Area = U-Value =  ************ ADDITIONAL E  Cooling Heating Typical	ELEMENT  CLEMENT  CLEMENT  CLEMENT  CLEMENT  CLEMENT  CLEMENT	= 3 = 3 	7.00 ,388  1 ttion t***** tration qft = qft = qft =	ft/F *****	Unco Unco *****	nd. S nd. S ***** 6 CFM 9 CFM 9 CFM ****	 pace pace *****	Temp: Temp: *****	Cooli Heati *****	ing = ing =	100.0
W/sqft Total Watt Schedule N  ********** ADDITIONAL E  Area = U-Value =  ********** ADDITIONAL E  Cooling Heating Typical  *********** ADDITIONAL E		= 3 = 3 	7.00 ,388  1 ttion t***** tration qft = qft = qft =	ft/F *****	Unco Unco ***** 2 3 3	nd. S nd. S ***** 6 CFM 9 CFM 9 CFM ****	 pace pace *****	Temp: Temp:	Cooli Heati *****	ing = ing =	100.0

Space Name						_	)1-31-91
Prepared By							0190202
arrier Hou	rly Analys	sis Program					2 1 of 1
*****	******	*****	*****	****	******	*****	******
	Walls	Roof	Glass				
J-Value :	0.290	0.100	0.580		g Weight		M
Weight :	M	M			actor	: 0.	
Color :	D	D		Interna	l Shades	?	N
People : s	qft/persor	n = 0.	0 Schedul	.e = 1	Activity	Level	= 3
Lights : W	/sqft	= 3.9	7 Schedul	.e <b>=</b> 2	Wattage 1	Mult.	= 1.20
: F	ixture Typ	e =	3 Free-han	ging			
SPACE NAME	= 103			,			
				Floor Are	a :	242.	0 sqft
Exposure	:	E	N	Roof Area	:	209.	0 sqft
_							
Wall Area		.05.0	0.0	Current			
Glass Area *******	: ] : ******	38.0	0.0 ****	Current Elements	•	Pt,In ******	******
Glass Area	: 1 : ******* ELEMENT -  = ts =	38.0 ************ Other Elec	0.0 ****	Elements		Pt,In ******	. * * * * * *
Total Wat	: 1 : **********************************	38.0 ********* Other Elec 7.00 1,694 1	0.0 ****	Elements		Pt,In *******  ******	******
ADDITIONAL : W/sqft Total Wat Schedule :	: 1 : ******** ELEMENT - = ts = No. = ******** ELEMENT -	38.0 ********* Other Elec 7.00 1,694 1	0.0 ******* tric ********	Elements ******** ********	********* *******	******* ****** ling =	

				01 21 0
Space Name :				01-31-9
Prepared By :			CONSUL	610019020
Carrier Hourl				Page 1 of
******	*****	******	******	******
		Roof	Glass	
U-Value :	0.290	0.100	0.580 Building Weight	: M
Weight :	M	M	Glass Factor	: 0.58
	D	D	Internal Shades	? N
People : saf	t/person	= 0.0	Schedule = 1 Activit	y Level =
Lights : W/s	aft	= 3.97	Schedule = 2 Wattage	Mult. = 1.2
: Fix	ture Type		Free-hanging	
SPACE NAME	= 105			
			Floor Area :	242.0 sqft
Exposure	•	E	N Roof Area :	209.0 sqft
Wall Area	105	. 0	0.0 Current	
Glass Area			0.0 Elements : El	.Pt.In
liass vied	. 50	_		,
******	******	******	******	*****
**************	EMENT - Otl			******
**************************************	=	ner Electr 7.00		******
W/sqft Total Watts	=	ner Electr		******
W/sqft	=	ner Electr 7.00		*****
Total Watte Schedule No ************************************	= ; = ; = ; . = ;*********	7.00 1,694 1	*********	
W/sqft Total Watts Schedule No ************** ADDITIONAL EL Area =	= = = = = = = = = = = = = = = = = = =	7.00 1,694 1	Uncond. Space Temp:Co	oling = 100.0
W/sqft Total Watts Schedule No **************** ADDITIONAL EL Area = U-Value =	= = = = = = = = = = = = = = = = = = =	7.00 1,694 1 ********* ctition sqft BTU/hr/sqf	Uncond. Space Temp:Coft/F Uncond. Space Temp:He	oling = 100.0 ating = 90.0
W/sqft Total Watts Schedule No ************ ADDITIONAL EL Area = U-Value =	= = = = = = = = = = = = = = = = = = =	7.00 1,694 1 2***********************************	Uncond. Space Temp:Co	oling = 100.0 ating = 90.0
W/sqft Total Watts Schedule No ********** ADDITIONAL EL Area = U-Value = ***************	######################################	7.00 1,694 1 ********* stition sqft BTU/hr/sqf	Uncond. Space Temp:Coft/F Uncond. Space Temp:He	oling = 100.0 ating = 90.0
W/sqft Total Watts Schedule No *************** ADDITIONAL EI Area = U-Value =	# # # # # # # # # # # # # # # # # # #	7.00 1,694 1 2******** stition sqft BTU/hr/sqf	Uncond. Space Temp:Coft/F Uncond. Space Temp:He	oling = 100.0 ating = 90.0

Space Name : 1	07. 107A.	109				0	1-31-9
Prepared By :			CONSUL				19020
Carrier Hourly							1 of
******	*****	****	*****	******	*****		
			Glass				
U-Value : ( Weight :	0.290	0.100	0.580	Buildin	a Weight	: 1	4
Weight :	M	M	0.000			: 0.!	
Color :	D	D				?	N
	•			2		•	••
People : sqft	/person	= 594.0	Schedu	le = 1	Activit	v Level	=
Lights : W/sq:	ft	= 3.23	Schedu	le = 2	Wattage	Mult.	= 1.2
: Fixt	ure Type	= 3	Free-har	nging			
SPACE NAME =	107, 107A	, 109					
				Floor Are		594.0	
Exposure :			N	Roof Area	:	513.0	) sqft
Wall Area :		0	0.0	Current			
Glass Area :	76.	0		Elements			
*****	******	*****	****	*****	*****	******	****
ADDITIONAL ELEM	MENT - Oth	er Elect	ric				
W/sqft	=	5.00					
	=						
W/sqft	=	5.00					
W/sqft Total Watts Schedule No.	= = = *****	5.00 2,970 1	*****	******	*****	******	****
W/sqft Total Watts Schedule No.	= = = *****	5.00 2,970 1	*****		*****	******	****
W/sqft Total Watts Schedule No.	= =  ********* MENT - Par	5.00 2,970 1 *******					
W/sqft Total Watts Schedule No.	= =  ******** MENT - Par 	5.00 2,970 1 ******** tition	Unc	********* ond. Space	Temp:Co	 oling = 1	100.0
W/sqft Total Watts Schedule No. ************************************	= = ********** MENT - Par 81.0 s 0.200 B	5.00 2,970 1 ******* tition eqft TU/hr/sq	Unce	ond. Space	Temp:Co	oling = 1	100.0 90.0
W/sqft Total Watts Schedule No.  ***********************************	= = ******** MENT - Par 81.0 s 0.200 B	5.00 2,970 1 ******** tition eqft TU/hr/sq	Unce	ond. Space	Temp:Co	oling = 1	100.0 90.0
W/sqft Total Watts Schedule No.  **************** ADDITIONAL ELEMANT SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDULE SCHEDU	= = ******** MENT - Par 81.0 s 0.200 B	5.00 2,970 1 ******** tition eqft TU/hr/sq	Unce	ond. Space	Temp:Co	oling = 1	100.0 90.0
W/sqft Total Watts Schedule No.  ************* ADDITIONAL ELEM Area = U-Value =  ***********************************	= = ******** MENT - Par 81.0 s 0.200 B	5.00 2,970 1 ******** tition eqft TU/hr/sq	Unco	ond. Space	Temp:Co Temp:He	oling = 1 ating =	90.0
W/sqft Total Watts Schedule No.  ************* ADDITIONAL ELEM  Area = U-Value =  ****************** ADDITIONAL ELEM  W/sqft	= = ******** MENT - Par 81.0 s 0.200 B *******	5.00 2,970 1 ******** tition eqft TU/hr/sq	Unco	ond. Space	Temp:Co Temp:He	oling = 1 ating =	90.0
W/sqft Total Watts Schedule No.  ************* ADDITIONAL ELEM  Area = U-Value =  **************** ADDITIONAL ELEM  W/sqft Total Watts	= = = ********* 81.0 s 0.200 B ********	5.00 2,970 1 ******** tition Gft TU/hr/sq ******* thts	Unce ft/F Unce ******** Schedu	ond. Space ond. Space ************************************	Temp:Co Temp:He	oling = 1 ating =	90.0
W/sqft Total Watts Schedule No.  ************* ADDITIONAL ELEM  Area = U-Value =  ******************* ADDITIONAL ELEM  W/sqft	= = = ********* 81.0 s 0.200 B ********	5.00 2,970 1 ******** tition Gft TU/hr/sq ******* thts	Unco	ond. Space ond. Space ************************************	Temp:Co Temp:He	oling = 1 ating =	90.0
W/sqft Total Watts Schedule No.  ************* ADDITIONAL ELEM  Area = U-Value =  ************* ADDITIONAL ELEM  W/sqft Total Watts Fixture Type	= = = = = = = = = = = = = = = = = = =	5.00 2,970 1 ******** tition eqft TU/hr/sq ******* thts	Unco ft/F Unco ******** Schedu Wattage Free-hance	ond. Space ond. Space ************************************	Temp:Co Temp:He ******	oling = 1 ating = ********* = 2 = 1.00	100.0 90.0 *****
W/sqft Total Watts Schedule No.  ***********************************	= = = = = = = = = = = = = = = = = = =	5.00 2,970 1 ********* tition eqft TU/hr/sq ******** thts 0.17 100 3 (:	Unco ft/F Unco ************************************	ond. Space ond. Space ************************************	Temp:Co Temp:He ******	oling = 1 ating = ********* = 2 = 1.00	100.0 90.0 *****
W/sqft Total Watts Schedule No.  **************** ADDITIONAL ELEM  Area = U-Value =  ***************  ADDITIONAL ELEM  W/sqft Total Watts Fixture Type  ***********************************	= = = = = = = = = = = = = = = = = = =	5.00 2,970 1 ******** tition eqft TU/hr/sq ******* thts 0.17 100 3 (3	Unco ft/F Unco ******** Schedu: Wattage Free-hand	ond. Space ond. Space *********  le No. e Multiplicating) *********	Temp:Co Temp:He ******	oling = 1 ating = ********* = 2 = 1.00	100.0 90.0 *****
W/sqft Total Watts Schedule No.  ***************** ADDITIONAL ELEM Area = U-Value =  ***************** ADDITIONAL ELEM W/sqft Total Watts Fixture Type	= = = = = = = = = = = = = = = = = = =	5.00 2,970 1 ******** tition 	Unco ft/F Unco ******** Schedu Wattage Free-hand	ond. Space ond. Space ************************************	Temp:Co Temp:He ******	oling = 1 ating = ********* = 2 = 1.00	100.0 90.0 *****

						_	
Space Name : 111							-31-91
Prepared By : EN	GG APPLIC	ATIONS CO	NSUL				190202
Carrier Hourly A	nalysis P	rogram				<b>Pa</b> ge	1 of 1
*****	*****	*****	*****	*****	******	*****	****
Wa	11 <b>s</b> :	Roof	Glass				
U-Value: 0.	290 0	.100	0.580	Building	y Weight	: M	
Weight :	м	M			actor		8
_	D	D		Interna:	Shades	?	N
People : sqft/p	erson =	0.0	Schedul	e = 1	Activity	Level	= 3
Lights : W/sqft	=	2.73	Schedul	.e = 2	Wattage N	Mult.	= 1.20
	e Type =		ree-han		_		
SPACE NAME = 1	11						
				Floor Area	a :	363.0	sqft
Exposure :	E		N	Roof Area	:	314.0	sqft
Wall Area :	132.0		0.0	Current			
						<b>-</b>	
Glass Area :	76.0		0.0	Elements	: El, E	Pt,In	
	76.0 *****	****		Elements	•	•	*****
Glass Area : *******	****	*****	*****		•	•	****
	****	*****	*****		•	•	*****
Glass Area : ****************** ADDITIONAL ELEME	******** NT - Othe:	*****	*****		•	•	*****
Glass Area : *******	******** NT - Othe: 	******** r Electri 	*****		•	•	*****
Glass Area :  ***************  ADDITIONAL ELEME  W/sqft Total Watts	******** NT - Othe: 	******** r Electri 	*****		•	•	*****
Glass Area : ************** ADDITIONAL ELEME W/sqft	******** NT - Othe: 	********* r Electric 7.00 2,541	*****		•	•	*****
Glass Area :  ***************  ADDITIONAL ELEME  W/sqft Total Watts	******** NT - Othe: = = =	********* r Electri 7.00 2,541	****** C 	*****		******	
Glass Area :  ***************  ADDITIONAL ELEME  W/sqft Total Watts Schedule No.	********* NT - Othe: = = = = ******	********* r Electri 7.00 2,541 1	****** C 	*****		******	
Glass Area :  *****************  ADDITIONAL ELEME  W/sqft  Total Watts Schedule No.	********* NT - Othe: = = = = ******	********* r Electri 7.00 2,541 1	****** C 	*****		******	
Glass Area :  *****************  ADDITIONAL ELEME  W/sqft  Total Watts Schedule No.  ***********************************	******** NT - Othe: = = = ******** NT - Part 49.0 sq	******** r Electri 7.00 2,541 1 ********	******* C *******	**************************************	**************************************	**************************************	*****
Glass Area :  *****************  ADDITIONAL ELEME  W/sqft  Total Watts Schedule No.  ***********************************	******** NT - Othe: = = = ******** NT - Part 49.0 sq	******** r Electri 7.00 2,541 1 ********	******* C *******	**************************************	**************************************	**************************************	*****
Glass Area :  *****************  ADDITIONAL ELEME  W/sqft Total Watts Schedule No.  ***************  ADDITIONAL ELEME  Area = U-Value =	******** NT - Othe  = = = NT - Part  49.0 sq 0.200 BT	7.00 2,541 1 ******** ition ft U/hr/sqft	******  c  *******  Uncc /F Uncc	*********  *********  ond. Space	Temp: Cool	**************************************	***** 00.0 %
Glass Area :  ***************  ADDITIONAL ELEME  W/sqft Total Watts Schedule No.  **************  ADDITIONAL ELEME  Area =	******** NT - Othe  = = = NT - Part  49.0 sq 0.200 BT	7.00 2,541 1 ******** ition ft U/hr/sqft	******  c  ******  Uncc /F Uncc	*********  *********  ond. Space	Temp: Cool	**************************************	*****
Glass Area :  *****************  ADDITIONAL ELEME  W/sqft Total Watts Schedule No.  ***************  ADDITIONAL ELEME  Area = U-Value =	******** NT - Othe  = = = ******** NT - Part  49.0 sq 0.200 BT	********* r Electri 7.00 2,541 1 ******** ition ft U/hr/sqft	******  c  ******  Uncc /F Uncc	*********  *********  ond. Space	Temp: Cool	**************************************	*****
Glass Area :  *******************  ADDITIONAL ELEME  W/sqft Total Watts Schedule No.  ***************  ADDITIONAL ELEME  Area = U-Value =  ***********************************	******** NT - Othe  = = = ******* NT - Part  49.0 sq 0.200 BT	7.00 2,541 1 ******** ition ft U/hr/sqft *******	******  Unco /F Unco	*********  ond. Space ond. Space	Temp: Cool	**************************************	*****
Glass Area :  ******************  ADDITIONAL ELEME  W/sqft Total Watts Schedule No.  *************  ADDITIONAL ELEME  Area = U-Value =  U-Value =  Cooling :	******** NT - Othe  = = = ******* NT - Part  49.0 sq 0.200 BT  ******* NT - Infi	******** r Electri 7.00 2,541 1 ******* ition ft U/hr/sqft ******* ltration sqft =	******  Unco /F Unco	*********  ond. Space ond. Space	Temp: Cool	**************************************	***** 00.0 %
Glass Area :  ********************* ADDITIONAL ELEME  W/sqft Total Watts Schedule No.  ************** ADDITIONAL ELEME  Area = U-Value =  U-Value =  Cooling : Heating :	******** NT - Othe  = = = ******* NT - Part  49.0 sq 0.200 BT	******** r Electri 7.00 2,541 1 ******* ition ft U/hr/sqft ******* ltration sqft = sqft =	******  C ******  Uncc /F Uncc ******	*********  ond. Space ond. Space	Temp: Cool	**************************************	*****

Space Name	: 113									•		01-	31-9
Prepared By	: ENG	G AF	PLICA	ATION	s cons	UL					6	1001	90202
Carrier Hou											Pa	ge 1	of :
	*****	_		_	****	****	****	****	****	****	****	***	****
	Wal	ls	F	Roof	Gl	ass							
U-Value :	0.2	90	0.	100	0.	580	Bu	ildin	g Wei	ght	:	M	
Weight :		M		M					actor			0.58	
Color :		D		D			In	terna	l Sha	des	?	N	
People : s	qft/pe	rson	ı =	0	.0 Sc	hedul	le	= 1	Acti	vity	Leve	1 =	
Lights : W				2.		hedu!			Watt				1.20
	ixture				3 Fre	e-har				•			
SPACE NAME	 = 11	 3											
							Floo	r Are	a :		36	3.0	sqft
Exposure	:		Ē			N	Roof	Area			31	4.0	sqft
													-
			32.0			0.0	Curr	ent					
Wall Area Glass Area		1						ent ents	:	El,I	Pt,In		
Wall Area		1	32.0	****					:	El,I	Pt,In	***	****
Wall Area	: : *****	1 ****	32.0 76.0	**** Elec	****				: ****	El,I	Pt,In	***	****
Wall Area Glass Area ************************************	: : *****	1 ****	32.0 76.0 ***** Other		****				: ****	El,I	Pt,In	***	****
Wall Area Glass Area ************* ADDITIONAL 	: : ***** ELEMEN	1 **** T - 	32.0 76.0 ***** Other	7.00	****				: ****	El,I ****	Pt,In	****	****
Wall Area Glass Area ******** ADDITIONAL W/sqft Total Wat	: : ***** ELEMEN 	**** T - = =	32.0 76.0 ***** Other	7.00 2,541	****				: ****	El,I ****	Pt,In	***	****
Wall Area Glass Area ************* ADDITIONAL 	: : ***** ELEMEN 	**** T - = =	32.0 76.0 ***** Other	7.00	****				: ****	E1,E	Pt,In	***	****
Wall Area Glass Area ********* ADDITIONAL W/sqft Total Wat Schedule	: : ***** ELEMEN  ts No.	**** T - = = =	32.0 76.0 ***** Other	7.00 2,541 1	***** ctric	0.0	Elem	ents ****	****	****	****	****	****
Wall Area Glass Area *********** ADDITIONAL W/sqft Total Wat Schedule *********	ts	**** T - = = = =	32.0 76.0 ****** Other	7.00	***** ctric	0.0	Elem	ents ****	****	****	****	****	****
Wall Area Glass Area ********* ADDITIONAL W/sqft Total Wat Schedule	ts	**** T - = = = =	32.0 76.0 ****** Other	7.00	***** ctric	0.0	Elem	ents ****	****	****	****	****	****
Wall Area Glass Area *********** ADDITIONAL W/sqft Total Wat Schedule *********	****** ELEMEN  ts No.  *****	**** T - = = = = *** T	32.0 76.0 ****** Other	7.00 2,541 1	***** ctric	0.0	Elem	ents *****	****	*****	****		
Wall Area Glass Area ********** ADDITIONAL W/sqft Total Wat Schedule ********** ADDITIONAL	****** ELEMEN ts No *****	1 **** T - = = = **** T 49.	32.0 76.0 ****** Other 2 ****** Parti	7.00 2,541 1 1 **** tion	***** ctric	0.0 *****  *****	Elem	ents ***** *****	***** ***** Temp	***** ***** :Cool	***** *****	= 10	0.0 9
Wall Area Glass Area ********** ADDITIONAL W/sqft Total Wat Schedule ********* ADDITIONAL Area =	****** ELEMEN ts No *****	1 **** T - = = = **** T 49.	32.0 76.0 ****** Other 2 ****** Parti	7.00 2,541 1 1 **** tion	***** ctric  *****	0.0 *****  *****	Elem	ents ***** *****	***** ***** Temp	***** ***** :Cool	***** *****	= 10	0.0 9
Wall Area Glass Area ********** ADDITIONAL W/sqft Total Wat Schedule ********** ADDITIONAL Area U-Value = *********	****** ELEMEN ts No *****	**** T - = = = *** T 49.0	32.0 76.0 ****** Other 22 ****** Parti 0 sqf 00 BTU	7.00 2,541 1 1.****: tion	***** ctric  ****** sqft/F	0.0 ***** ***** Unco	Elem	ents ***** ***** Space Space	*****  *****  Temp Temp	***** ***** : Cool	*****  ***** ling:	= 10 = 9	0.0 9
Wall Area Glass Area ********** ADDITIONAL W/sqft Total Wat Schedule ********* ADDITIONAL Area = U-Value =	****** ELEMEN ts No *****	**** T - = = = *** T 49.0	32.0 76.0 ****** Other 22 ****** Parti 0 sqf 00 BTU	7.00 2,541 1 1.****: tion	***** ctric  ****** sqft/F	0.0 ***** ***** Unco	Elem	ents ***** ***** Space Space	*****  *****  Temp Temp	***** ***** : Cool	*****  ***** ling:	= 10 = 9	0.0 9
Wall Area Glass Area ********** ADDITIONAL W/sqft Total Wat Schedule ********* ADDITIONAL Area U-Value ******** ADDITIONAL Cooling	****** ELEMEN ts No ***** ELEMEN *****	**** T	32.0 76.0 ****** Other 22 ****** Parti 0 sqf 00 BTU ***** Infil	7.00 2,541 1 1.****: tion 	***** ctric ***** sqft/F *****	0.0 ***** ***** Unco	Elem	ents ****  ***** Space Space ****	*****  *****  Temp Temp	***** ***** : Cool	*****  ***** ling:	= 10 = 9	0.0 9
Wall Area Glass Area ********** ADDITIONAL W/sqft Total Wat Schedule ********* ADDITIONAL Area = U-Value = ********* ADDITIONAL	****** ELEMEN ts No ***** ELEMEN ***** ELEMEN : 0	**** T ** T 49.0 ** T05	32.0 76.0 ****** Other 22 ****** Parti 0 sqf 00 BTU *****	7.00 2,541 1 1.****: tion 	***** ctric ***** sqft/F *****	0.0 ***** ***** Unco	Elem	ents ***** ***** Space Space *****	*****  *****  Temp Temp	***** ***** : Cool	*****  ***** ling:	= 10 = 9	0.0 9

			SIM		J. 1.02 D.		11011					
Space Name											01-31	
Prepared By	: ENGG	APPL	ICATI	ONS (	CONSUL					610	00190	202
Carrier Hous	rly Ana	lysis	Prog	ram						Page	e 1 c	f 1
****				****	*****	****	****	*****	****	****	****	***
	Wall	s	Roc	f	Glass							
J-Value :	0.29	0	0.10	0	0.580	Bu	ildin	g Weigh	nt	:	M	
Weight :	M		М					actor			.58	
Color :	D		D	-				l Shade				
People : so	aft/per	son	=	0.0	Sched	ıle	= 1	Activi	ity L	evel	=	3
Lights : W	/saft		=	2.23	Sched	ıle	= 2	Wattac	je Mu	lt.	= 1	.20
	ixture				Free-ha			•	•			
SPACE NAME	= 115											
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						Floo	r Are	a :	1	.079	.0 <b>s</b> g	ft
Exposure	•		E		N	Roof					.0 sq	
Vall Area		485			0.0			·				
Glass Area		152				Elem	ents	: E	:1.Pt	.In		
	: *****	152 ****	.0 ****	**** lecti	0.0	Elem ****			El,Pt ****	,In ****	****	***
Glass Area	: ****** ELEMENT 	152 ***** - Ot	.0 ****	00	0.0				E1,Pt *****	,In ****	****	***
Glass Area ********* ADDITIONAL 1 W/sqft Total Wat	: ****** ELEMENT 	152 ***** - Ot 	.0 **** her E	00 53	0.0				El,Pt *****	,In ****:	****	***
Glass Area ********* ADDITIONAL 1 W/sqft Total Wat	: ****** ELEMENT 	152 ***** - Ot 	.0 **** her E	00 53	0.0				El,Pt ***** 	,In ****: 	****	* * *  * * *
Glass Area ********* ADDITIONAL 1 W/sqft Total Wat	: ****** ELEMENT ts No.	152 **** - Ot = = ****	.0 ***** her E 7. 7,5	00 53 1	0.0				E1,Pt	,In ****	* * * * *	***  ***
ADDITIONAL I Schedule I	: ****** ELEMENT  ts No.  ****** ELEMENT	152 **** - Ot = = *****	.0 ***** her E 7. 7,5	00 53 1 *****	0.0 ******* ric	*****	****	*****	****	****	****	* * *  * * *
ADDITIONAL I Schedule I ANDITIONAL I ANDITIONAL I ANDITIONAL I ANDITIONAL I Area =	: ****** ELEMENT  ts No.  ****** ELEMENT	152 **** - Ot = = = ***** - Pa 47.0	.0 ***** her E 7. 7,5 **** rtiti	00 53 1 ****	0.0 ****** ric *******	******	***** ***** Space	******* ****** Temp: 0	***** *****	****:  ****: ng =		
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ADDITIONAL I Schedule I ANDITIONAL I ANDITIONAL I ANDITIONAL I ANDITIONAL I Area =	: ****** ELEMENT  ts No.  ****** ELEMENT	152 **** - Ot = = = ***** - Pa 47.0	.0 ***** her E 7. 7,5 **** rtiti	00 53 1 ****	0.0 ****** ric ******* Unc	*****  *****  cond.	*****  **** Space Space	******* ****** Temp: 0	*****   *****  Cooli	****:  ****: ng = ng =	90.	9 
ADDITIONAL I Schedule I ANDITIONAL I ANDITIONAL I ANDITIONAL I ANDITIONAL I Area =	****** ELEMENT  ****** ELEMENT  1 0	152 ***** - Ot = = ***** - Pa 47.0 .200	.0 **** her E 7. 7,5  **** rtiti sqft BTU/h ****	00 53 1 ***** on	0.0 ****** ric ******* Unc	*****  *****  cond.	*****  **** Space Space	******  ******  Temp: C	*****   *****  Cooli	****:  ****: ng = ng =	90.	0 % 
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Applitional in the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the	****** ELEMENT  ******  ELEMENT  0  ******  1 0  *******  ELEMENT  0  ******	152 **** - Ot = = **** - Pa 47.0 .200 **** - In	.0 **** her E 7. 7,5  **** rtiti sqft BTU/h ** filtr M/sqf	00 53 1 ***** on 	0.0 ****** ric	cond.	*****  Space Space ****	******  ******  Temp: C	*****   *****  Cooli	****:  ****: ng = ng =	90.	0 % 
Applitional in the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the	****** ELEMENT  ts No.  ****** ELEMENT  0  ****** ELEMENT  : 0.:	152 **** - Ot 47.0 .200 **** - In 05 CF	.0 **** her E 7.5 **** rtiti sqft BTU/h #iltr M/sqff M/sqf	00 53 1 ***** on 	0.0 ****** ric	****** cond. cond.	*****  Space Space *****	******  ******  Temp: C	*****   *****  Cooli	****:  ****: ng = ng =	90.	0 % 

Space Name: 115B Prepared By: ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program	01-31-91 6100190202 Page 1 of 1
Walls Roof Glass U-Value: 0.290 0.100 0.580 Building Weight Weight: M M Glass Factor Color: D D Internal Shades	: 0.58
People : sqft/person = 0.0 Schedule = 1 Activity : Lights : W/sqft = 2.73 Schedule = 2 Wattage M : Fixture Type = 3 Free-hanging	
SPACE NAME = 115B  Floor Area :	264.0 sqft
Exposure : E N Roof Area :	264.0 sqft
Wall Area : 210.0 0.0 Current	
Glass Area : 76.0 0.0 Elements : El,I	n
**************************************	******
W/sqft = 7.00	
Total Watts = 1,848	
Schedule No. = 1	
*************	*****
ADDITIONAL ELEMENT - Infiltration	
Cooling : 0.05 CFM/sqft = 14 CFM	
Heating : 0.08 CFM/sqft = 21 CFM	
Typical : 0.08 CFM/sqft = 21 CFM	

Space Name: 115A, 123, Prepared By: ENGG APPI Carrier Hourly Analysis	CICATIONS CONSUL		01-31-91 6100190202 Page 1 of 1
Walls U-Value: 0.290 Weight: M Color: D	Roof Glas 0.100 0.58 M D	8	: M : 0.58
People : sqft/person Lights : W/sqft : Fixture Type	= 1.57 Sche	dule = 2 Wattage	
Glass Area : C ***********************************	E 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		460.0 sqft 332.0 sqft ,Li,Pt,In
W/sqft = Total Watts = Schedule No. =		******	******
ADDITIONAL ELEMENT - Li W/sqft = Total Watts = Fixture Type =	2.17 Sched 1,000 Watta	dule No. age Multiplier and address and age Multiplier and address and age and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second a second and a second	= 2 = 1.00
**************************************		*******	******
Area = 138.0 U-Value = 0.200	sqft U BTU/hr/sqft/F U	ncond. Space Temp:Concond. Space Temp:Hea	oling = 100.0 % ating = 90.0 %
**************************************		******	*****
	'M/sqft	24 CFM 37 CFM 37 CFM	

						_	
Space Name :							1-31-91
Prepared By	: ENGG A	PPLICATIONS	CONSUL				0190202
Carrier Hour	ly Analy	sis Program					1 of 1
*****	****	*****	*****	*****	*****	****	*****
	Walls	Roof	Glass				
U-Value :	0.290	0.100	0.580	Building W	<i>l</i> eight	: 1	M
Weight :	M	M		Glass Fact		: 0.	
Color :	D	D		Internal S	Shades	?	N
People : sq	ft/perso	n = 316.0	) Schedule	e = 1 Ac	tivity	Level	= 3
Lights : W/s	sqft	= 2.79	Schedule	e = 2 Wa	ittage M	ult.	= 1.20
: Fi	xture Ty	pe = :	3 Free-hand	ing			
SPACE NAME	= 125,	127, 131A,	131,				
				loor Area			
Exposure	:	E	N F	loof Area	:	599.	0 sqft
Wall Area		407.0	0.0	urrent			
_				_		L 7.	
Glass Area	:	152.0	0.0 E	lements	: EI'b	t, in	
Glass Area ********	•			::::::::::::::::::::::::::::::::::::::			*****
	*****	******	******				*****
ADDITIONAL E	******* LEMENT -	**************************************	******				*****
ADDITIONAL E	******** LEMENT -	**************************************	******				*****
ADDITIONAL EX W/sqft Total Watts	**************************************	Other Elect 4.40 2,781	******				*****
ADDITIONAL E	**************************************	Other Elect 4.40 2,781	******				*****
ADDITIONAL EX W/sqft Total Watts	**************************************	4.40 2,781	**************************************	*****	*****	*****	
ADDITIONAL EXW/sqft Total Watts Schedule No	********* LEMENT - = = = = = = = = = = = = = = = = = =	0ther Elect 4.40 2,781 1	**************************************	*****	*****	*****	
ADDITIONAL EXAMPLE W/sqft Total Watts Schedule No	********* LEMENT - = s = 0. = ******** LEMENT -	4.40 2,781 1 **********************************	**************************************	**************************************	**************************************	****** ****** ing =	******
***********  ADDITIONAL EI  W/sqft  Total Watt: Schedule No  **************  ADDITIONAL EI	********* LEMENT - = s = 0. = ******** LEMENT -	4.40 2,781 1 **********************************	**************************************	**************************************	**************************************	****** ****** ing =	******
*********  ADDITIONAL E  W/sqft Total Watt: Schedule No  *********  ADDITIONAL E  Area =	********* LEMENT - = s = 0. = ******** LEMENT -	4.40 2,781 1 **********************************	**************************************	**************************************	**************************************	****** ****** ing =	******
*********  ADDITIONAL EXAMPLE OF TOTAL Watter Schedule Note that watter Schedule Note that water was a second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of t	**************************************	4.40 2,781 1 **********************************	tric tric ************************************	**************************************	**************************************	****** ****** ing =	******
*********  ADDITIONAL E  W/sqft Total Watt: Schedule No  *********  ADDITIONAL E  Area =	**************************************	4.40 2,781 1 **********************************	tric tric ************************************	**************************************	**************************************	****** ****** ing =	******
*********  ADDITIONAL EXAMPLE TOTAL WATE  Schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule	********* LEMENT -  ******* LEMENT -  33 0.20  ******** LEMENT -	4.40 2,781 1 **********************************	***********  tric  uncor  ft/F Uncor	d. Space Te	**************************************	****** ****** ing =	******
*********  ADDITIONAL EXAMPLE TOTAL WATE  Schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule Note to the schedule	******** LEMENT -  ******* LEMENT -  33 0.20  ******* LEMENT -  : 0.05 : 0.08	Other Elect  4.40 2,781 1  ********** Partition  O sqft  O BTU/hr/sc  ******** Infiltration  CFM/sqft = CFM/sqft = CFM/sqft	************  tric  *********  Uncor  qft/F Uncor  **********  on  = 33 = 51	**************************************	**************************************	****** ****** ing =	******

							1-31-9
Space Name	: 133					_	
Prepared By	: ENGG AP	PLICATIONS	CONSUL				019020
Carrier Hou	rly Analys	is Program				_	1 of
******	******	******	******	*****	*****	*****	*****
	Walls	Roof	Glass				
U-Value :	0.290	0.100	0.580	Buildin	g Weight	:	M
Weight :	M	M		Glass F	actor	: 0.	58
Color :	D	D		Interna	l Shades	?	N
People : s	qft/person	= 0.	0 Schedu	le = 1	Activity	Level	=
Lights : W	/sqft	= 2.4	3 Schedu	le = 2	Wattage 1	Mult.	= 1.2
	ixture Typ		3 Free-ha		_		
SPACE NAME	= 133						
				Floor Are	a :	594.	0 sqft
Exposure Wall Area	:	E	N	Roof Area	:	513.	0 sqft
*****							
Mali Wies	: 2	75.0	0.0	Current			
Wall Area Glass Area		75.0 76.0		Current Elements	: El,1	Pt,In	
			0.0		: El,1	Pt,In *****	****
	: ******	76.0 ******	0.0	Elements	: El,I	Pt,In *****	****
Glass Area ************* ADDITIONAL	: ******* ELEMENT -	76.0 ******* Other Elec	0.0	Elements	: El,1	Pt,In ******	*****
Glass Area ************ ADDITIONAL :  W/sqft	: ******** ELEMENT - 	76.0 ******** Other Elec 	0.0	Elements	: El,1	Pt,In ******	*****
Glass Area ********* ADDITIONAL: W/sqft Total Wat	: ******** ELEMENT -  = ts =	76.0 ******* Other Elec	0.0	Elements	: El,1	Pt,In ******	*****
Glass Area ************ ADDITIONAL :  W/sqft	: ******** ELEMENT -  = ts =	76.0 ******** Other Elec 	0.0	Elements	: El,1 *******	Pt,In ******	*****
Glass Area ********* ADDITIONAL W/sqft Total Wat Schedule	: ********* ELEMENT - = ts = No. =	76.0  ********* Other Elec  4.40 2,614 1	0.0 ****** tric	Elements *******	*******	******	*****
Glass Area  **********  ADDITIONAL  W/sqft  Total Wat  Schedule  *********	: ************************************	76.0  ********** Other Elec  4.40 2,614 1  *********	0.0 ****** tric	Elements *******	*******	******	*****
Glass Area ********* ADDITIONAL W/sqft Total Wat Schedule ********	: ************************************	76.0  ********** Other Elec  4.40 2,614 1  *********	0.0 ****** tric	Elements *******	*******	******	*****
Glass Area  *********  ADDITIONAL  W/sqft  Total Wat Schedule  **********  ADDITIONAL	: ********  ELEMENT -  ts =  No. =  *********	76.0  ********* Other Elec  4.40 2,614 1  ********* Partition	0.0 ******* tric *******	Elements ******** ********	******	*****	
Glass Area  ********  ADDITIONAL  W/sqft  Total Wat Schedule  ********  ADDITIONAL  Area =	: ******** ELEMENT -  ts = No. =  ******** ELEMENT -  33.	76.0  ********* Other Elec  4.40 2,614 1  ******** Partition O sqft	0.0 ******* tric ********	Elements ******** *********	**************************************	******* ******* ling =	100.0
Glass Area  *********  ADDITIONAL  W/sqft  Total Wat Schedule  **********  ADDITIONAL	: ******** ELEMENT -  ts = No. =  ******** ELEMENT -  33.	76.0  ********* Other Elec  4.40 2,614 1  ********* Partition	0.0 ******* tric ********	Elements ******** *********	**************************************	******* ******* ling =	100.0
Glass Area  ********  ADDITIONAL  W/sqft  Total Wat Schedule  ********  ADDITIONAL  Area =	: ******** ELEMENT -  ts = No. =  ******** ELEMENT -  33. 0.20	76.0  ******** Other Elec  4.40 2,614 1  ******** Partition  0 sqft 0 BTU/hr/s	0.0 ******* tric ******* Unc	Elements ********  *********  ond. Space ond. Space	*********  ********  Temp:Cool	******* ****** ling =	100.0
Glass Area  *********  ADDITIONAL  W/sqft  Total Wat Schedule  ********  ADDITIONAL  Area U-Value =	: ******* ELEMENT -  ts = No. =  ******** ELEMENT -  33. 0.20	76.0  ******** Other Elec  4.40 2,614 1  ********* Partition  0 sqft 0 BTU/hr/sc  *********	0.0 ******* tric ******** Unc qft/F Unc	Elements ********  *********  ond. Space ond. Space	*********  ********  Temp:Cool	******* ****** ling =	100.0
Glass Area  *********  ADDITIONAL  W/sqft  Total Wat Schedule  *********  ADDITIONAL  Area = U-Value =  ********  ADDITIONAL  Cooling	: ******** ELEMENT  ts = No. =  ********* ELEMENT  33. 0.20  ********* ELEMENT	76.0  ******** Other Elec  4.40 2,614 1  ********* Partition  0 sqft 0 BTU/hr/sc  *********	0.0 ******* tric ******** Unc qft/F Unc *******	Elements ********  *********  ond. Space ond. Space	*********  ********  Temp:Cool	******* ****** ling =	100.0
Glass Area  *********  ADDITIONAL  W/sqft  Total Wat Schedule  *********  ADDITIONAL  Area U-Value =	: ******** ELEMENT  ts = No. =  ********* ELEMENT  33. 0.20  ********* ELEMENT	76.0  ********* Other Elec  4.40 2,614 1  ********* Partition  0 sqft 0 BTU/hr/s  ********* Infiltration	0.0 ******* tric ******** Unc qft/F Unc *******	Elements ********  *********  ond. Space ond. Space	*********  ********  Temp:Cool	******* ****** ling =	100.0

<b></b>		U	SPACE DESCR		
Space Name	: 135			•	01-31-91
Prepared By	: ENGG APP	LICATIONS	CONSUL		6100190202
	rly Analysia				Page 1 of 1
	*****		*****	*****	*****
	Walls	Roof	Glass		
U-Value :	0.290	0.100	0.580	Building Weight	: M
Weight :	M	M		Glass Factor	: 0.58
Color :	D	D		Internal Shades	? N
	_	-			
People : s	qft/person	= 0.0	Schedule	= 1 Activity	y Level = 3
	/sqft		Schedule		
	ixture Type		Free-hangi		
SPACE NAME	= 135				
			F)	.oor Area :	363.0 sqft
Exposure	:	E	N Ro	oof Area :	313.0 sqft
Wall Area		9.0	0.0 Cu	irrent	
Glass Area		6.0	0.0 E	ements : El	,Pt,In
*****	*****	******	*****	*****	******
ADDITIONAL 1	ELEMENT - O	ther Elect	ric		
ADDITIONAL	ELEMENT - O	ther Elect	ric		
	ELEMENT - O	ther Elect 7.00	ric		
W/sqft	=		ric 		
W/sqft Total Wat		7.00	ric		
W/sqft		7.00 2,541	ric		
W/sqft Total Wat		7.00 2,541	ric	*****	******
W/sqft Total Wat Schedule		7.00 2,541 1	ric	******	******
W/sqft Total Wat Schedule	ts = No. =	7.00 2,541 1	ric	*****	******
W/sqft Total Wat Schedule	ts =  No. =  ***********************************	7.00 2,541 1 	******	**************************************	**************************************
W/sqft Total Wate Schedule 1	ts = No. = ************************************	7.00 2,541 1 	**************************************	**************************************	
W/sqft Total Wate Schedule 1 ********* ADDITIONAL 1	ts = No. = ************************************	7.00 2,541 1 	**************************************		
W/sqft Total Wate Schedule 1 ********* ADDITIONAL 1	ts = No. = ************************************	7.00 2,541 1 *********** artition sqft BTU/hr/sq	Uncond		ating = 90.0 %
W/sqft Total Wate Schedule   ********** ADDITIONAL   Area = U-Value =	ts = No. = ************************************	7.00 2,541 1 *********** artition sqft BTU/hr/sq	Uncond	l. Space Temp:He	ating = 90.0 %
W/sqft Total Wate Schedule  ********* ADDITIONAL  Area = U-Value =  ***********	ts = No. = ************* ELEMENT - Pa 50.0 0.200 ************	7.00 2,541 1 ********* artition sqft BTU/hr/sq	Uncond	. Space Temp:He	ating = 90.0 %
W/sqft Total Wate Schedule  ******** ADDITIONAL  Area = U-Value =  ********* ADDITIONAL  Cooling	ts = No. =  *********** ELEMENT - Pa  50.0 0.200  ********** ELEMENT - In	7.00 2,541 1 ********* artition sqft BTU/hr/sq ********	Uncondift/F Uncondimental	CFM	ating = 90.0 %
W/sqft Total Wate Schedule  ********* ADDITIONAL  Area = U-Value =  ***********	######################################	7.00 2,541 1 ********* artition sqft BTU/hr/sq ******** nfiltratio  FM/sqft = FM/sqft =	#**********  Uncondift/F Uncondift/F Uncondift  ***********************************	. Space Temp:He	ating = 90.0 %

			SPACE DESCRIPTION	
Space Name				01-31-9
Prepared By	: ENGG APPI	LICATIONS	CONSUL	610019020
Carrier Hou	rly Analysis	B Program		Page 1 of
******	******	*****	********	******
	Walls	Roof	Glass	
U-Value :	0.290	0.100	0.580 Building Weigh	nt : M
Weight :	M	M	Glass Factor	: 0.58
-		D	Internal Shade	es ? N
People : s	qft/person	= 0.0	Schedule = 1 Activi	ity Level =
Lights : W	//sqft	= 2.65	Schedule = 2 Wattag	ge Mult. = 1.2
: F	ixture Type	= 3	Free-hanging	
SPACE NAME	= 137			
			Floor Area :	
	•		E Roof Area :	<b>418.0 s</b> qft
Wall Area	: 209	9.0	210.0 Current	
Glass Area	: 77	7.0	78.0 Elements : E	El,Pt,In
*****	*****	******	*****	******
ADDITIONAL	ELEMENT - O	ther Elect	ric	
W/sqft	=	7.00		
	= .ts =			
	ts =			
Total Wat Schedule	ts = No. =	3,388	**********	*******
Total Wat Schedule ********* ADDITIONAL Area =	ts = No. = ************ ELEMENT - Pa	3,388 1 	Uncond. Space Temp: C	Cooling = 100.0
Total Wat Schedule ************************************	ts = No. = ************ ELEMENT - Pa	3,388 1 		Cooling = 100.0
Total Wat Schedule  *********  ADDITIONAL  Area = U-Value =	ts = No. =   ************ ELEMENT - Pa  66.0 0.200	3,388 1 ********* artition sqft BTU/hr/sq	Uncond. Space Temp:Cft/F Uncond. Space Temp:F	Cooling = 100.0 Heating = 90.0
Total Wat Schedule  *********  ADDITIONAL  Area = U-Value =	ts = No. = ************ ELEMENT - Pa	3,388 1 ********* artition sqft BTU/hr/sq	Uncond. Space Temp:Cft/F Uncond. Space Temp:F	Cooling = 100.0 Heating = 90.0
Total Wat Schedule  *********  ADDITIONAL  Area = U-Value =  **********  ADDITIONAL  Cooling	ts = No. =  ************ ELEMENT - Pa  66.0 0.200  ********** ELEMENT - In	3,388 1 ******** artition sqft BTU/hr/sq ******** afiltration  FM/sqft =	Uncond. Space Temp: Cft/F Uncond. Space Temp: F	Cooling = 100.0 Heating = 90.0
Total Wat Schedule  *********  ADDITIONAL  Area U-Value =  *********  ADDITIONAL  Cooling	************ ELEMENT - Pa  66.0 0.200  **********  ELEMENT - In  : 0.05 CI : 0.08 CI	3,388 1 ******** artition sqft BTU/hr/sq ******** afiltration  FM/sqft =	Uncond. Space Temp: Cft/F Uncond. Space Temp: Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco Francisco	Cooling = 100.0 Heating = 90.0

D101 NG C	COMED					-31-9
		CONSIII.				19020
		CONSUL				
*******	******	*****	*****	****		
Walls	Roof					
0.290	0.100		Building	weight	: M	
м	м		Glass F	actor	: 0.5	8
D	D					N
-	_					
ft/person	= 0.0	Schedu	le = 1	Activity	Level	=
sqft	= 2.75	Schedu	le = 2	Wattage 1	Mult.	= 1.2
xture Type	= 3	Free-ha	nging	_		
= B121 NW	CORNER					_
	N	W	Roof Area	:	0.0	sqft
		35.0	Current			
: 0		0.0	D.T.C.II.C.II.C.D	: El,	Gr,Pt,In	
			*****	****	*****	****
LEMENT - Ot	her Elect:	-i-				
 E						
				in an in an		
 E	4.40					
= s = o. =	4.40 1,170 1					
= = 8 =	4.40 1,170 1		*****	****	*****	 ****
= 8 = 0. = *****	4.40 1,170 1 **********************************	 *******		*****	*****	 ****
= = = = = = = = = = = = = = = = = = =	4.40 1,170 1 **********************************	******* 66.0 sqf		*****	*****	 ****
= = = = = = = = = = = = = = = = = = =	4.40 1,170 1 **********************************	 *******		*****	 ******	 ****
= = = = = = = = = = = = = = = = = = =	4.40 1,170 1 **********************************	******** 66.0 sqf 7.0 ft 8.0 ft		*****	*****	 ****
= 8 = 0. =	4.40 1,170 1 ************** cound = 20 = = = ********** rtition sqft	******** 66.0 sqf 7.0 ft 8.0 ft	************	**************************************	 *******  ling = 1	 *****
= s = co. = = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co. = co.	4.40 1,170 1 ************** cound = 20 = = = ********** rtition sqft	******** 66.0 sqf 7.0 ft 8.0 ft	************	**************************************	 *******  ling = 1	 *****
= 8 = 0. =	4.40 1,170 1 ********** cound = 20 = = ******** stition sqft BTU/hr/sq: ******** sfiltration 'M/sqft =	********  66.0 sqf 7.0 ft 8.0 ft  ********  Unc ft/F Unc	t  *********  ond. Space ond. Space	******** Temp:Coo	******** ling = 1	*****
	ENGG APPI ly Analysis ******** Walls 0.290 M D ft/person sqft xture Type = B121 NW : : 91 : 00	: ENGG APPLICATIONS ly Analysis Program  ******************  Walls Roof 0.290 0.100  M M D D  ft/person = 0.0  sqft = 2.75  xture Type = 3  = B121 NW CORNER  : N : 91.0 : 0.0  **********************************	<pre>****************************** Walls Roof Glass 0.290 0.100 0.580     M     M     D     D  ft/person = 0.0 Schedu sqft = 2.75 Schedu xture Type = 3 Free-ha:  = B121 NW CORNER  :    N     W : 91.0     35.0 :    0.0     0.0 ************************</pre>	ENGG APPLICATIONS CONSUL  ly Analysis Program  ***********************************	ENGG APPLICATIONS CONSUL  ly Analysis Program  ***********************************	### ENGG APPLICATIONS CONSUL 6100    Analysis Program Page

Cnace Name								_	
	: B119							_	1-31-91
Prepared B					٠				0190202
Carrier Ho				a					1 of 1
*****	*****	*****	*****	*****	*****	*****	******	*****	*****
	Wall	-	Roof	Glas					
U-Value :	0.29	0	0.100	0.58			Weight		
Weight :	M		M		Gl	ass Fact	tor	: 0.	58
Color :	D		D		In	ternal s	Shades	?	N
People :	sqft/per	son	= 484.	0 Sche	edule :	= 1 Ac	ctivity	Level	= 3
Lights :	W/sqft		= 2.7	5 Sche	edule :	= 2 Wa	attage M	fult.	= 1.20
	Fixture			3 Free-	-hanging				
SPACE NAME	= B11	9							
						r Area		484.	0 sqft
Exposure	:		N		W Roof	Area	:	0.	0 sqft
Wall Area	:	0.	0	44.	0 Curr	ent			
Glass Area		0.	0	0.	O Elem	ents	: E1,G	r, In	
******	*****	*****	*****	*****	****	*****	*****	****	*****
ADDITIONAL	ELEMENT	- Oth	er Elec	tric					
W/sqft		=	5.00						
Total Wa	tts	=	2,420						
Schedule	No.	=	1						
			*****	*****	****	*****	*****	****	*****
*****	*****								
********* ADDITIONAL	****** ELEMENT	- Gro	und						
	****** ELEMENT			484.0 s	gft				
	or Area			484.0 s 22.0 f					
Slab Flo	or Area	=			t				
Slab Flo	or Area	=======================================		22.0 f	t t		****	*****	*****
Slab Flo Perimete Depth	or Area	 = =  *****	*****	22.0 f 11.0 f	t t	*****	*****	****	*****
Slab Flo Perimete Depth	or Area	======================================	 ******* iltrati	22.0 f 11.0 f *******	****** 26 CF		****	****	*****
Slab Flo Perimete Depth ********************************	or Area  ******  ELEMENT  : 0.	======================================	 ****** iltrati	22.0 f 11.0 f *******	t t ******		****	****	*****

Space Name			SPACE DESC		
	: B117				01-31-91
Prepared By	: ENGG A	PPLICATIONS	CONSUL		6100190202
Carrier Hous	rly Analy	sis Program	1		Page 1 of 1
*****				*****	******
	Walls	Roof	Glass		
U-Value :	0.290	0.100	0.580	Building Weight	: M
Weight :	M	М		Glass Factor	
Color :	D	D		Internal Shades	
,0101	_				
Pennle : s	aft/perso	n = 242	0 Schedule	= 1 Activit	v Level = 3
Lights : W			5 Schedule	= 2 Wattage	Mult. = 1.20
			3 Free-hang		
		PC -		 	
SPACE NAME	= B117				
SPACE NAME	- 5117		<b>.</b>	loor Area :	242.0 sqft
Exposure		N	=	oof Area :	0.0 sqft
Wall Area		0.0	22.0 C		0.0 5410
		0.0		lements : El	l C= Tn
Glass Area	• • • • • • • • • • • • • • • • • • •			*********	L
				*****	*****
ADDITIONAL 1	ELEMENT -	Other Elec	tric		
** / 6 +	_	E 00			
W/sqft		5.00			
Total Wat	ts =	1,210			
	ts =	1,210			
Total Wat	ts = No. =	1,210 1			
Total Wat	ts = No. = ******	1,210	******		*******
Total Wat	ts = No. = ******	1,210	*******		*******
Total Water Schedule	ts = No. = ******** ELEMENT -	1,210 1 **********************************		*********	*******
Total Water Schedule	ts = No. = ******* ELEMENT - r Area	1,210 1 **********************************	242.0 sqft		******
Total Wat: Schedule   ********* ADDITIONAL   Slab Floor Perimeter	ts = No. = ******* ELEMENT - r Area	1,210 1 **********************************	242.0 sqft 11.0 ft		*******
Total Water Schedule	ts = No. = ******* ELEMENT - r Area	1,210 1 **********************************	242.0 sqft		
Total Wat: Schedule   ********* ADDITIONAL   Slab Floo: Perimeter Depth	ts = No. = ******** ELEMENT - r Area	1,210 1 **********************************	242.0 sqft 11.0 ft 11.0 ft		
Total Wat: Schedule   *********** **********  ************	ts = No. = ******** ELEMENT - r Area	1,210 1 **********************************	242.0 sqft 11.0 ft 11.0 ft	********	
Total Wat: Schedule   ********** ADDITIONAL   Slab Floo: Perimeter Depth	ts = No. = ******** ELEMENT - r Area	1,210 1 **********************************	242.0 sqft 11.0 ft 11.0 ft		
Total Wat: Schedule   ********** ADDITIONAL   Slab Floo: Perimeter Depth *********** ADDITIONAL	ts = No. = ******* ELEMENT - r Area  *******	1,210 1 **********************************	242.0 sqft 11.0 ft 11.0 ft	*******	
Total Wat: Schedule   ********** ADDITIONAL   Slab Floo: Perimeter Depth ********** ADDITIONAL	ts = No. = ******* ELEMENT - r Area  ******* ELEMENT - : 0.05	1,210  1 *********  Ground  = = = *********  Infiltrati	242.0 sqft 11.0 ft 11.0 ft ************************************	**************************************	
Total Wat: Schedule   ********** ADDITIONAL   Slab Floo: Perimeter Depth ********** ADDITIONAL	ts = No. = ******* ELEMENT - r Area  ******* ELEMENT - : 0.05 : 0.08	1,210 1 **********************************	242.0 sqft 11.0 ft 11.0 ft 	*******	

			5.	MPLE	SPAC	e De	SCRIPT	1011				
Space Name												01-31-
Prepared By						UL						001902
Carrier Hou											-	e 1 of
*****							*****	****	*****	****	***	*****
	Wall	_		of		288						
	0.29		0.1	100	0.	580	Bui	.ldin	g Weigh	t		
Weight :	M			M			Gla	es F	actor		: 0	
Color :	D	)		D			Int	erna	l Shade	8	?	N
People : s												
Lights : V	√sqft		=		5 Sci	hedu	le =	= 2	Wattag	e Mul	t.	= 1.
: 1	ixture	Type	=		3 Fre	e-ha:	nging					
SPACE NAME	= B11	5										
									a :			.0 sqf
Exposure	:		N			W	Roof	Area	:		0.	.0 sqf
Wall Area			0.0				Curre					
Glass Area	:		0.0		(	0.0	Eleme	ents	: E	l,Gr,	In	
*****	*****	***	***	***	****	***	****	***	*****	****	***	*****
ADDITIONAL	ELEMENT	- 0	ther	Elect	tric							
W/sqft		=	7	.00								
Total Wat	:ts	=	6,	160								
Schedule	No.	=		1								
********	******	***	****	****	 * * * * *	 ****	 *****	****	 ******	****	****	*****
ADDITIONAL	ELEMENT	- G	round	l								
Slab Floo	or Area		=		80.0							·
Perimeter	:		=		40.0	ft						
Depth			=		11.0	ft						
		****	 ****	****	 ****	 ****	 *****	****	 ******	****	****	*****
	*****											
		- I	nfilt	ratio	on							
	ELEMENT						 17 CFM	. <b></b> .				
*********** ADDITIONAL Cooling Heating	ELEMENT : 0.	 05 C	FM/sq	 [ft =								

Space Name : B113 Prepared By : ENGG A Carrier Hourly Analy	sis Program	ONSUL	01-31-91 6100190202 Page 1 of 1
Walls U-Value: 0.290 Weight: M Color: D	Roof	Glass 0.580 Building Weight Glass Factor Internal Shades	: 0.58
People : sqft/perso Lights : W/sqft : Fixture Ty	= 2.75	Schedule = 1 Activity Schedule = 2 Wattage Free-hanging	
SPACE NAME = B113  Exposure : Wall Area : Glass Area : ************************************	0.0	W Roof Area : 149.0 Current	308.0 sqft 0.0 sqft Gr,In
W/sqft = Total Watts = Schedule No. =			
ADDITIONAL ELEMENT -	-	*****	****
	= 3	3.0 sqft 3.0 ft 1.0 ft	
**************************************		*******	******
Cooling : 0.05 Heating : 0.08 Typical : 0.08		16 CFM 25 CFM 25 CFM	·

Space Nam										വ വ	-31-	. <b>a</b> :
										5100		
Prepared					CONSUL					_		
Carrier H	Hourly	/ Analys	sis Pro	gram						age .		
*****	****	****	*****	****			****	*****	*****	***	***	*
U-Value : Weight :		Walls	Ro	of	Glass							
U-Value :	;	0.290	0.1	.00	0.580	Bu	ilding	g Weigh	it :			
Weight :	:	M		M		Gl	ass Fa	actor	:	0.5		
Color :		D		D		In	terna:	l Shade	es ?	1	N	
People : Lights :	: sqft	:/person	n =	0.0	Sched	lule :	= 1	Activi	ty Leve	el :	=	_
Lights :	: W/sc	<b>ąft</b>	=	2.75	Sched	lule :	= 2	Wattag	ge Mult	• '	= 1.	2
:	: Fixt	ture Typ	pe =	3	Free-h	anging						
SPACE NAM		 - 2111										_
SPACE NAM	1E -	- PIII				Floo	r Area	a :	6	38.0	sqf	t
Evnosuva		•	N		W	Roof				0.0		
Exposure		•	0.0			Curr		•		•••		Ī
Wall Area									El,Gr,P	- Tn		
Glass Are	aa :		0.0			FIGU	enra.		LIGIIF	-		
						*****						-
ADDITIONA					ric							
				.00								-
W/sqft		=	5	.00								-
W/sqft	Watts	=	5 3,									-
W/sqft Total W Schedul	Watts le No	= = . =	5 3,	190 190								_
W/sqft Total W Schedul	Watts le No.	= - - *****	5 3, *****	190 1 1		****	****	*****	*****	***	 ***	*
W/sqft Total W Schedul ********* ADDITIONA	Watts le No. *****	= - - ****** EMENT -	5, 3, ****** Ground	190 1 1			****	****	*****	***		*
W/sqft Total W Schedul ******** ADDITIONA Slab Fl	Watts le No. ***** AL ELI	= - - ****** EMENT -	5, 3, ****** Ground	190 1 1 ******	 pa 0.88	 [ft	****	*****	****	 ****	 ****	*
W/sqft Total W Schedul ********* ADDITIONA	Watts le No. ***** AL ELI	= - - ****** EMENT -	5, 3, ****** Ground	190 1 1 ******	38.0 sq 29.0 ft	 [ft :	****	*****	****	***	 ****	*
W/sqft Total W Schedul ********* ADDITIONA Slab Fl	Watts le No. ***** AL ELI	= - - ****** EMENT -	5, 3, ****** Ground	190 1 1 ******	 pa 0.88	 [ft :	****	****	****	***	 ***	*
W/sqft Total W Schedul ********* ADDITIONA Slab Fl Perimet Depth	Watts le No. ****** AL ELI loor I	= . = ****** EMENT - 	53, ****** Ground	1 6	38.0 sq 29.0 ft							-
W/sqft Total W Schedul ********* ADDITIONA Slab Fl Perimet Depth	Watts le No. ****** AL ELH loor H ter	= ****** EMENT - Area	5, ****** Ground = = = ******	.00 190 1 *****	38.0 sq 29.0 ft 11.0 ft	: !ft :: :	 ****	 ****	****		***	-
W/sqft Total W Schedul ******** ADDITIONA Slab Fl Perimet Depth ********	Watts le No. ***** AL ELH loor N ter *****	= ****** EMENT - Area	5, ***** Ground = =	190 1 ***** 6:	38.0 sq 29.0 ft 11.0 ft	ft::::::::::::::::::::::::::::::::::::	 ****	****		 ***	 ***	*
W/sqft Total W Schedul ******** ADDITIONA Slab Fl Perimet Depth ******* ADDITIONA Area	Watts le No. ***** AL ELI loor I ter *****	= =	5, ***** Ground = = ****** Partit	190 1 ****** 6:	38.0 sq 29.0 ft 11.0 ft	ft::::::::::::::::::::::::::::::::::::	 ***** 	******* Temp:(	 ******	***	 **** 	*
W/sqft Total W Schedul ******** ADDITIONA Slab Fl Perimet Depth ******* ADDITIONA Area	Watts le No. ***** AL ELI loor I ter *****	= ****** EMENT - Area	5, ***** Ground = = ****** Partit	190 1 ****** 6:	38.0 sq 29.0 ft 11.0 ft	ft::::::::::::::::::::::::::::::::::::	 ***** 	******* Temp:(	 ******	***	 **** 	**
W/sqft Total W Schedul ******** ADDITION Slab Fl Perimet Depth ******* ADDITION Area U-Value	Watts le No. ***** AL ELH loor I ter *****	= = = = = = = = = = = = = = = = = = =	5, ****** Ground = = Partit	6: ****** fon	38.0 sq 29.0 ft 11.0 ft ******** Un ft/F Un	ft:  ****** acond.	***** Space	******* Temp:(	****** Cooling	***	**** 85.0	*
W/sqft Total W Schedul ********* ADDITIONA Slab Fl Perimet Depth ********* ADDITIONA ATEA U-Value	Watts le No.  *****  AL ELI  loor A  ter  *****	= = = = = = = = = = = = = = = = = = =	53, ****** Ground = = = Partit 0 sqft	6: ***** fon hr/sq:	38.0 sq 29.0 ft 11.0 ft ********	ft:  ****** acond.	***** Space	******* Temp:(	****** Cooling	***	**** 85.0	
W/sqft Total W Schedul ******** ADDITIONA Slab Fl Perimet Depth ******* ADDITIONA ATEA U-Value ******* ADDITIONA	Watts le No. ***** AL ELI ter ***** AL ELI ****	= = = = = = = = = = = = = = = = = = =	53,  ******  Ground  = =  ******  Partit  0 sqft 00 BTU/  ******  Infilt	6: ***** ion hr/sq: *****	38.0 sq 29.0 ft 11.0 ft ********	ft::::::::::::::::::::::::::::::::::::	***** Space Space	******* Temp:(	****** Cooling	***	**** 85.0	*
W/sqft Total W Schedul  ******** ADDITIONA Slab Fl Perimet Depth  ******** ADDITIONA ATEA U-Value  ******** ADDITIONA Cooling	Watts le No. ***** AL ELI ter  ***** AL ELI  AL ELI  AL ELI	= = = = = = = = = = = = = = = = = = =	53,  ******  Ground  = =  ******  Partit  0 sqft 00 BTU/  ******  Infilt	190 1 ***** 6: ***** ion hr/sq: *****	38.0 sq 29.0 ft 11.0 ft ********	ft  it*****  acond. acond. it*****	***** Space Space	******* Temp:(	****** Cooling	***	**** 85.0	*
W/sqft Total W Schedul ********* ADDITIONA Slab Fl Perimet Depth ADDITIONA Area U-Value ******** ADDITIONA Cooling Heating	Watts le No. ***** AL ELI ter  ***** AL ELI  AL ELI  G	= = = = = = = = = = = = = = = = = = =	53,  ******  Ground  = = ******  Partit  00 BTU/  ******  Infilt  CFM/sq  CFM/sq	190 1 ***** 6: ***** ion hr/sq: ***** ration	38.0 sq 29.0 ft 11.0 ft ********	ft::::::::::::::::::::::::::::::::::::	***** Space Space *****	******* Temp:(	****** Cooling	***	**** 85.0	*

								1-31-91
Space Name	: B105						_	
Prepared By				IL				0190202
Carrier Hou	rly Analys:	is Progra	m				Page	1 of 1
*****	*****	*****	*****	****	*****	****	*****	*****
	Walls	Roof	Gla					
U-Value :	0.290	0.100	0.5			y Weight		M
Weight :	M	M			Glass Fa	actor	: 0.	58
Color :	D	D				l Shades		N
People : s	aft/person	= 242	.0 Sch	nedule	= 1	Activity	y <b>Le</b> vel	= 3
Lights : W	/saft	= 2.	75 Sch	edule	= 2	Wattage	Mult.	= 1.20
: F	ixture Type	e =	3 Free	-hangi	ng	_		
SPACE NAME	= B105							
				Flo	oor Area	a :	242.	0 sqft
Exposure	•	N			of Area			0 sqft
Wall Area	:	0.0			rrent			_
Glass Area		0.0	38	3.0 El	ements	: El	.Gr.Pt.I	n
*****	*****							
ADDITIONAL								
UDDITIONUD .	RIEMENT - (		CTTIC					
		other Ele	ctric					
W/caf+								
W/sqft	=	4.40						
W/sqft Total Wat	= ts =	4.40 1,065						
W/sqft	= ts =	4.40						
W/sqft Total Wat Schedule	= ts = No. =	4.40 1,065			****	*****	****	****
W/sqft Total Wat Schedule	= ts = No. = ******	4.40 1,065 1			****		*****	*****
W/sqft Total Wat Schedule	= ts = No. = ******	4.40 1,065 1	*****					
W/sqft Total Wat Schedule ************** ADDITIONAL	ts = No. = *********	4.40 1,065 1 **********	*****			*****		
W/sqft Total Wat Schedule ********** ADDITIONAL Slab Floo	= ts = No. =	4.40 1,065 1 ***********************************	******	sqft				
W/sqft Total Wat Schedule ********** ADDITIONAL Slab Floo Perimeter	= ts = No. =	4.40 1,065 1 ***********************************	242.0	sqft ft				
W/sqft Total Wat Schedule ********** ADDITIONAL Slab Floo	= ts = No. =	4.40 1,065 1 ***********************************	******	sqft ft				
W/sqft Total Wat Schedule ********* ADDITIONAL Slab Floo Perimeter Depth	= ts = No. =	4.40 1,065 1 ***********************************	242.0 3.0 11.0	sqft ft ft				
W/sqft Total Wat Schedule *********** ADDITIONAL Slab Floo Perimeter Depth *********	ts = No. = ********* ELEMENT - r Area	4.40 1,065 1 ***********************************	242.0 3.0 11.0	sqft ft ft				
W/sqft Total Wat Schedule ********* ADDITIONAL Slab Floo Perimeter Depth	ts = No. = ********* ELEMENT - r Area	4.40 1,065 1 ***********************************	242.0 3.0 11.0	sqft ft ft *****	****			*****
W/sqft Total Wat Schedule ********* ADDITIONAL Slab Floo Perimeter Depth ********** ADDITIONAL	ts = No. = ******** ELEMENT - r Area  *********	4.40 1,065 1 ***********************************	242.0 3.0 11.0	sqft ft ft	*****	 *******	*****	*****
W/sqft Total Wat Schedule ********* ADDITIONAL Slab Floo Perimeter Depth ********* ADDITIONAL Area =	ts = No. = ******** ELEMENT - r Area  ******** ELEMENT -	4.40 1,065 1 ******** Ground = = ******** Partition O sqft	242.0 3.0 11.0	sqft ft ft ******	**************************************	******* Temp: Co	 ******* 	****** 85.0 F
W/sqft Total Wat Schedule ********* ADDITIONAL Slab Floo Perimeter Depth ********* ADDITIONAL Area =	ts = No. = ******** ELEMENT - r Area  *********	4.40 1,065 1 ******** Ground = = ******** Partition O sqft	242.0 3.0 11.0	sqft ft ft ******	**************************************	******* Temp: Co	 ******* 	****** 85.0 F
W/sqft Total Wat Schedule  ********* ADDITIONAL  Slab Floo Perimeter Depth  ********* ADDITIONAL  Area = U-Value =	######################################	4.40 1,065 1 ******** Ground = = ******** Partition 0 sqft 0 BTU/hr/	242.0 3.0 11.0 ******	sqft ft ft ******* Uncond	*******  Space	******* Temp:Co	******** oling = ating =	****** 85.0 F
W/sqft Total Wat Schedule  ********** ADDITIONAL  Slab Floo Perimeter Depth  ********** ADDITIONAL  AUDITIONAL  Area = U-Value =	= ts = No. =	4.40 1,065 1	242.0 3.0 11.0 ******	sqft ft ft ******* Uncond	*******  Space	******* Temp:Co	******** oling = ating =	****** 85.0 F
W/sqft Total Wat Schedule  ********* ADDITIONAL  Slab Floo Perimeter Depth  ********* ADDITIONAL  Area = U-Value =	= ts = No. =	4.40 1,065 1	242.0 3.0 11.0 ******	sqft ft ft Uncond	*******  . Space . Space	******* Temp:Co	******** oling = ating =	****** 85.0 F
W/sqft Total Wat Schedule  ********** ADDITIONAL  Slab Floo Perimeter Depth  ********* ADDITIONAL  Area = U-Value =  ********** ADDITIONAL	= ts = No. =	4.40 1,065  1 ******** Ground ******** Partition 0 sqft 0 BTU/hr/ ********* Infiltrat	242.0 3.0 11.0 *******	sqft ft ft .***** Uncond Uncond	******  . Space . Space	******* Temp:Co	******** oling = ating =	****** 85.0 F
W/sqft Total Wat Schedule  ********** ADDITIONAL  Slab Floo Perimeter Depth  ********* ADDITIONAL  Area = U-Value =  ********* ADDITIONAL  Cooling	= ts = No. =	4.40 1,065  1 ********* Ground = = = ******** Partition 0 sqft 0 BTU/hr/ ******** Infiltrat	242.0 3.0 11.0 *******	sqft ft ft v****** Uncond Uncond	****** . Space . Space	******* Temp:Co	******** oling = ating =	****** 85.0 F
W/sqft Total Wat Schedule  ********** ADDITIONAL  Slab Floo Perimeter Depth  ********* ADDITIONAL  Area = U-Value =  ********* ADDITIONAL  Cooling	= ts = No. =	4.40 1,065  1 ******** Ground ******** Partition 0 sqft 0 BTU/hr/ ******** Infiltrat CFM/sqft CFM/sqft	242.0 3.0 11.0 *******	sqft ft ft .***** Uncond Uncond	****** . Space . Space	******* Temp:Co	******** oling = ating =	****** 85.0 F

Space Name Prepared By	: ENGG A				01-31-91 6100190202
Carrier Hou				******	Page 1 of 1
*****	Walls	Roof	Glass		
U-Value:	0.290	0.100	0.580	Building Weight Glass Factor	: M
Weight :	M	W		Glass Factor Internal Shades	: 0.58 : ? N
Color :	D	D		Internal Shades	s f N
People : s			0 Schedu	le = 1 Activit	y Level =
Lights : W : F	//sqft 'ixture Ty		5 Schedu 3 Free-ha	le = 2 Wattage nging	Mult. = 1.20
SPACE NAME	= B103				
				Floor Area :	484.0 sqft
Exposure	:	N		Roof Area :	0.0 sqft
Wall Area			144.0		0 T
Glass Area	-	0.0	76.0	Elements : El	
ADDITIONAL					
W/sqft		7.00			
	ts =	•			
Schedule	No. =	1			
******	*****	**************************************	*****	*****	*****
ADDITIONAL	ELEMENT -				
	ELEMENT - or Area		484.0 sqf		
	r Area	=	6.0 ft		
Slab Floo	r Area	=			
Slab Floo Perimeter Depth	r Area	= = = =	6.0 ft 11.0 ft		*****
Slab Floo Perimeter Depth	r Area	= = = = *******	6.0 ft 11.0 ft	*****	******
Slab Floo Perimeter Depth ********** ADDITIONAL Cooling	r Area  ******* ELEMENT -  : 0.05	= = = ********************************	6.0 ft 11.0 ft *********		******
Slab Floo Perimeter Depth ************************************	********* ELEMENT - : 0.05 : 0.08	= = =  ************************	6.0 ft 11.0 ft ************************************	*******	******

Space Name	: B101						01-31-9
Prepared By		PPLICA	TIONS	CONSUL			610019020
Carrier Hous							Page 1 of
*****					*****	*****	*****
	Walls	R	oof	Glass			
U-Value :	0.290	0.	100	0.580	Buildi	ing Weight	: M
Weight :	M		M		Glass	Factor	: 0.58
Color :	D		D		Intern	nal Shades	? N
People : B	qft/perso	n =	484.0	) Sched	ale = 1	l Activity	y Level =
Lights : W						2 Wattage	Mult. = 1.2
: F	ixture Ty	pe =	3	3 Free-h	anging		
SPACE NAME							
SPACE NAME	- B101				Floor Ar	rea :	484.0 sqft
Exposure	:	N		W	Roof Are		0.0 sqft
Exposure Wall Area	:	0.0			Current		
Glass Area	•			44.0	04110		
	•	00		0.0	Elements	: El	.Gr. in
		0.0	*****	0.0	Elements	: El	,Gr,in ******
*****	*****	****		*****	Elements	: El	,Gr,in *******
	*****	****		*****	*****	: El	*****
ADDITIONAL 1	******** ELEMENT -	***** Other		*****	*****	*****	*****
**************************************	******** ELEMENT - 	***** Other	Elect	*****	*****	*****	*****
ADDITIONAL 1	******** ELEMENT -  ts =	***** Other	Elect  5.00	*****	*****	*****	*****
ADDITIONAL 1 W/sqft Total Wate	******** ELEMENT  ts =	***** Other : : 2	Elect 5.00 ,420	******* tric	*******		******
ADDITIONAL 1 W/sqft Total Wate	******** ELEMENT  ts =	***** Other : : 2	Elect 5.00 ,420	******* tric	*******		*****
********* ADDITIONAL 1 W/sqft Total Wat: Schedule 1 *********	********  ELEMENT -  ts =  No. =  *********	***** Other : : 2	Elect 5.00 ,420 1	******* tric	*******		******
W/sqft Total Wat Schedule	******** ELEMENT -  ts =  No. =  ********	****** Other 2 : : : : : : : : : : : : : : : : : :	Elect 5.00 ,420 1	******** tric	******		******
********* ADDITIONAL 1 W/sqft Total Wate Schedule 1 ********* ADDITIONAL 1	********  ELEMENT -  ts =  No. =  ********  ELEMENT -  r Area	***** Other 2 ***** Groun	Elect 5.00 ,420 1 	******** tric *******	******		******
********* ADDITIONAL 1 W/sqft Total Wate Schedule 1 ********* ADDITIONAL 1 Slab Floor Perimeter	********  ELEMENT -  ts =  No. =  ********  ELEMENT -  r Area	***** Other  2  ***** Groun  = =	Elect 5.00 ,420 1 	******** tric  ******** 484.0 sq 22.0 ft	******		******
********* ADDITIONAL 1 W/sqft Total Wate Schedule 1 ********* ADDITIONAL 1	********  ELEMENT -  ts =  No. =  ********  ELEMENT -  r Area	***** Other 2 ***** Groun	Elect 5.00 ,420 1 	******** tric *******	******		******
******** ADDITIONAL 1 W/sqft Total Wate Schedule 1 ******** ADDITIONAL 1 Slab Floor Perimeter Depth	********  ELEMENT -  ts =  No. =  ********  ELEMENT -  r Area	***** Other  2  ***** Groun  = = =	Elect 5.00 ,420 1 	**************************************	**************************************	*****	******
********* ADDITIONAL 1 W/sqft Total Wat: Schedule 1 ********* ADDITIONAL 1 Slab Floo: Perimeter Depth	********  ELEMENT -  ts =  No. =  ********  ELEMENT -  r Area	****** Other  2  ****** Groun	Elect 5.00 ,420 1 ******* d	**************************************	**************************************	*****	******
******** ADDITIONAL 1 W/sqft Total Wat: Schedule 1 ********* ADDITIONAL 1 Slab Floo: Perimeter Depth ********** ADDITIONAL 1	******* ELEMENT -  ts =  No. =  ******* ELEMENT -  r Area	***** Other  2  ***** Groun  = =	Elect 5.00 ,420 1 	********* 484.0 sq 22.0 ft 11.0 ft	**********  ft  26 CFM	*****	******
********* ADDITIONAL 1 W/sqft Total Wat: Schedule 1 ********* ADDITIONAL 1 Slab Floo: Perimeter Depth	********  ELEMENT -  ts	***** Other  2  ***** Groun  = =	Elect 5.00 ,420 1 ****** tratic	*********  *******  484.0 sq 22.0 ft 11.0 ft	**************************************	*****	******

	SIMPLE SPACE DESCRIPTION	
Space Name : B100		01-31-91
Prepared By : ENGG APPL	ICATIONS CONSUL	6100190202
Carrier Hourly Analysis		Page 1 of 1
******	*********	_
Walls	Roof Glass	
U-Value: 0.290	0.100 0.580 Building Weight	: M
Weight: M	M Glass Factor	
Color : D	D Internal Shades	
Color:	D Internal Snades	? N
	= 968.0 Schedule = 1 Activity	
Lights : W/sqft		Mult. = 1.20
: Fixture Type	= 3 Free-hanging	
SPACE NAME = B100		
	Floor Area :	968.0 <b>s</b> qft
Exposure :	W S Roof Area :	0.0 sqft
Wall Area : 88	.0 44.0 Current	_
	.0 0.0 Elements : El,	Gr, In
	*********	
ADDITIONAL ELEMENT - Ot	her Electric	
W/sqft =	5.00	
Total Watts =		
Schedule No. =	1	
schedule No	<u> </u>	
*******	********	*****
		~~~~~
ADDITIONAL ELEMENT - Gr	ouna	
Oleh Miner Bere		
Slab Floor Area		
1 01 10 001	= 66.0 ft	
Depth	= 11.0 ft	
· · · · · · · · · · · · · · · · · · ·	********	*****
ADDITIONAL ELEMENT - In	filtration	
Cooling : 0.05 CF	M/sqft = 51 CFM	
Heating : 0.08 CF	M/sqft = 77 CFM	
Typical : 0.08 CF	M/sqft = 77 CFM	
	·	
*****		

Space Name : B118A												nı.	₹1 - ¢
Page 1 of   Page 1 of											_		
Walls Roof Glass U-Value: 0.290 0.100 0.580 Building Weight: M Weight: M M Glass Factor: 0.58 Color: D D D Internal Shades ? N  People: sqft/person = 462.0 Schedule = 1 Activity Level = Lights: W/sqft = 2.75 Schedule = 2 Wattage Mult. = 1.2 : Fixture Type = 3 Free-hanging  SPACE NAME = B118A  Floor Area : 462.0 sqft  Exposure: E S Roof Area : 0.0 sqft Wall Area : 158.0 0.0 Current Glass Area : 10.0 0.0 Elements : El,Gr,Gr,In  ADDITIONAL ELEMENT - Other Electric  W/sqft = 7.00 Total Watts = 3,234 Schedule No. = 1  ADDITIONAL ELEMENT - Ground  Slab Floor Area = 462.0 sqft Perimeter = 22.0 ft Depth = 13.0 ft  ADDITIONAL ELEMENT - Ground  Slab Floor Area = 105.0 sqft Perimeter = 21.0 ft Depth = 5.0 ft  ADDITIONAL ELEMENT - Infiltration  Cooling: 0.05 CFM/sqft = 24 CFM Heating: 0.08 CFM/sqft = 37 CFM					CONSU	JL							
Walls	Carrier Hour	ly Analys	sis Pro	gram									
U-Value: 0.290	*****						****	***	****	***	****	***	***
Weight: M M Glass Factor : 0.58 Color: D D D Internal Shades ? N  People: sqft/person = 462.0 Schedule = 1 Activity Level = Lights: W/sqft = 2.75 Schedule = 2 Wattage Mult. = 1.2 : Fixture Type = 3 Free-hanging  SPACE NAME = B118A  Floor Area : 462.0 sqft  Exposure : E S Roof Area : 0.0 sqft  Wall Area : 158.0 0.0 Current  Glass Area : 10.0 0.0 Elements : El,Gr,Gr,In  ***********************************			-										
People : sqft/person = 462.0 Schedule = 1 Activity Level = Lights : W/sqft = 2.75 Schedule = 2 Wattage Mult. = 1.2 : Fixture Type = 3 Free-hanging  SPACE NAME = B118A  Exposure : E S Roof Area : 462.0 sqft Wall Area : 158.0								ding	, Weig	ht	:	M	
People : sqft/person = 462.0 Schedule = 1 Activity Level = Lights : W/sqft = 2.75 Schedule = 2 Wattage Mult. = 1.2 : Fixture Type = 3 Free-hanging  SPACE NAME = B118A  Exposure : E S Roof Area : 462.0 sqft Wall Area : 158.0	Weight :	M	į	M			Glas	s Fa	ctor		:	0.5	В
Lights: W/sqft = 2.75 Schedule = 2 Wattage Mult. = 1.2 : Fixture Type = 3 Free-hanging  SPACE NAME = B118A  Floor Area : 462.0 sqft  Exposure : E S Roof Area : 0.0 sqft  Wall Area : 158.0 0.0 Current  Glass Area : 10.0 0.0 Elements : El,Gr,Gr,In  ***********************************							Inte	rnal	. Shad	les	?	1	N
Lights: W/sqft = 2.75 Schedule = 2 Wattage Mult. = 1.2 : Fixture Type = 3 Free-hanging  SPACE NAME = B118A  Floor Area : 462.0 sqft  Exposure : E S Roof Area : 0.0 sqft  Wall Area : 158.0 0.0 Current  Glass Area : 10.0 0.0 Elements : El,Gr,Gr,In  ***********************************	People : sq	ft/person	n = 4	462.0	Sch	nedule	<b>=</b>	1	Activ	ity	Leve	1	
: Fixture Type = 3 Free-hanging  SPACE NAME = B118A  Exposure : E	Lights : W/	sqft	=	2.75	Sch	nedule	<b>=</b>	2	Watta	ge 1	Mult.	:	= 1.3
SPACE NAME = B118A    Floor Area : 462.0 sqft	: Fi	xture Typ	pe =										
Exposure : E													
Wall Area : 158.0						F	floor A	Area	<b>:</b>		46	2.0	sqff
Glass Area : 10.0	Exposure	:	E									0.0	sqf
Glass Area : 10.0 0.0 Elements : El,Gr,Gr,In  ***********************************	Wall Area	:	158.0		(	0.0 C	urrent	t					
ADDITIONAL ELEMENT - Other Electric	Glass Area	:	10.0		(	).O E	lemen	ts	:	E1,0	Gr,Gr	,In	
W/sqft = 7.00 Total Watts = 3,234 Schedule No. = 1  **********************************	******	*****	****	****	****	*****	****	***	****	***	****	***	***
Total Watts = 3,234 Schedule No. = 1  **********************************	ADDITIONAL E	LEMENT -	Other 1	Electi	ric								
Total Watts = 3,234 Schedule No. = 1  **********************************													
Schedule No. = 1  **********************************	W/eaft		 7	.00									
######################################													
ADDITIONAL ELEMENT - Ground  Slab Floor Area = 462.0 sqft Perimeter = 22.0 ft Depth = 13.0 ft  ***********************************	Total Watt	g =	3,	234									
Perimeter = 22.0 ft Depth = 13.0 ft  ***********************************	Total Watt Schedule N	s = 0. =	3,:	234 1 									
Depth = 13.0 ft  ***********************************	Total Watt Schedule N	s = 0. = ******	3,:	234 1 		****	****	***		***		***	****
**************************************	Total Watt Schedule N ********* ADDITIONAL E Slab Floor	s = 0. =	3,: ****** Ground	234 1  ***** 	***** 62.0	sqft	****	 ***	****	***		***	***
ADDITIONAL ELEMENT - Ground  Slab Floor Area = 105.0 sqft Perimeter = 21.0 ft Depth = 5.0 ft  ***********************************	Total Watt Schedule N ********* ADDITIONAL E Slab Floor	s = 0. =	3,: ****** Ground	234 1  ***** 	***** 62.0	sqft	****			***		***	***
Slab Floor Area = 105.0 sqft  Perimeter = 21.0 ft  Depth = 5.0 ft  ***********************************	Total Watt Schedule N ********* ADDITIONAL E Slab Floor Perimeter	s = 0. =	3,: ****** Ground = =	234 1 ******	***** 52.0	sqft ft	****		****	***	 * * * * *	***	***
Perimeter = 21.0 ft  Depth = 5.0 ft	Total Watt Schedule N ********* ADDITIONAL E Slab Floor Perimeter Depth	s = 0. =	3,: ****** Ground = = = =	234 1 ******	***** 52.0 22.0	sqft ft ft							
Depth = 5.0 ft  ***********************************	Total Watt Schedule N ************ ADDITIONAL E Slab Floor Perimeter Depth ***********	s = 0. =	3,: ****** Ground = = = *******	234	***** 52.0 22.0	sqft ft ft							
**************************************	Total Watt Schedule N  *********** ADDITIONAL E  Slab Floor Perimeter Depth  ************ ADDITIONAL E	s = 0. =	3,: ****** Ground  = = = ******* Ground	234	***** 52.0 22.0 13.0	sqft ft ft *****							
Cooling : 0.05 CFM/sqft = 24 CFM Heating : 0.08 CFM/sqft = 37 CFM	Total Watt Schedule N  ********** ADDITIONAL E  Slab Floor Perimeter Depth  ********* ADDITIONAL E  Slab Floor	s = 0. =	3,: ****** Ground = = = ******* Ground	234 1	52.0 22.0 13.0 	sqft ft ft *****							
Heating : 0.08 CFM/sqft = 37 CFM	Total Watt Schedule N  **********  ADDITIONAL E  Slab Floor Perimeter Depth  **********  ADDITIONAL E  Slab Floor Perimeter	s = 0. =	3,5  ******  Ground  = = - *******  Ground	234	52.0 22.0 13.0 *****	sqft ft ft *****							
Heating : 0.08 CFM/sqft = 37 CFM	Total Watt Schedule N  **********  ADDITIONAL E  Slab Floor Perimeter Depth  ***********  ADDITIONAL E  Slab Floor Perimeter Depth	s = 0. =	3,:  ****** Ground  = = - ****** Ground	234 1	52.0 22.0 13.0 *****	sqft ft ft *****							
Typical: 0.08 CFM/sqft = 37 CFM	Total Watt Schedule N *********** ADDITIONAL E Slab Floor Perimeter Depth ********** ADDITIONAL E Slab Floor Perimeter Depth ********** ADDITIONAL E Cooling	s = 0. =	3,:  ****** Ground  = = - ****** Ground  = - Infilt:	234 1 	52.0 22.0 13.0  *****	sqft ft ft ****** sqft ft ft	*****						
	Total Watt Schedule N *********** ADDITIONAL E Slab Floor Perimeter Depth ********** ADDITIONAL E Slab Floor Perimeter Depth ********** ADDITIONAL E Cooling	s = 0. =	3,:  ****** Ground  = = - ****** Ground  = - Infilt:	234 1 	52.0 22.0 13.0  *****	sqft ft ft ****** sqft ft ft	*****						

Space Name: B118 Prepared By: ENGG APPLICAS Carrier Hourly Analysis Pro	ogram	01-31-91 6100190202 Page 1 of 1
· · · · · · · · · · · · · · · · · · ·	oof Glass 100 0.580 Building Weight M Glass Factor D Internal Shades	. 0.58
People : sqft/person = Lights : W/sqft = : Fixture Type =		
SPACE NAME = B118  Exposure : E Wall Area : 166.0 Glass Area : 10.0 ***********************************	S Roof Area : 0.0 Current 0.0 Elements : El,Gr	
	5.00 ,420 1	
ADDITIONAL ELEMENT - Ground	**************************************	*****
Slab Floor Area = Perimeter = Depth =	484.0 sqft 22.0 ft 5.0 ft	
ADDITIONAL ELEMENT - Infile	**************************************	*****
Cooling : 0.05 CFM/so Heating : 0.08 CFM/so Typical : 0.08 CFM/so	Ift = 39 CFM	

Space Name : B114 AHU Prepared By : ENGG APP arrier Hourly Analysi	LICATIONS CON B Program		01-31-91 6100190202 Page 1 of 1
Walls U-Value: 0.290 Weight: M Color: D		lass .580 Building Weight Glass Factor Internal Shades	: 0.58
People : sqft/person Lights : W/sqft : Fixture Type	= 2.75 S	chedule = 1 Activity chedule = 2 Wattage ee-hanging	
SPACE NAME = B114 A  Exposure : Wall Area : 15 Glass Area : 2 ***********************************	E 6.0 0.0	Floor Area : S Roof Area : 0.0 Current 0.0 Elements : El,	
W/sqft = Total Watts = Schedule No. =	5.00 2,420 1		
**************************************		********	******
Slab Floor Area Perimeter Depth	= 22.	<del>-</del>	
ADDITIONAL ELEMENT - I		*******	*****
Cooling : 0.05 C Heating : 0.08 C Typical : 0.08 C		26 CFM 39 CFM 39 CFM	

01-31-91 Space Name: B112, B110 6100190202 Prepared By : ENGG APPLICATIONS CONSUL arrier Hourly Analysis Program Page 1 of 1 \*\*\*\*\*\*\*\*\*\*\* Walls Roof Glass
U-Value: 0.290 0.100 0.580
Weight: M M
Color: D D Building Weight : M Glass Factor : 0.58 Internal Shades ? N People : sqft/person = 484.0 Schedule = 1 Activity Level = 3 Lights : W/sqft = 2.75 Schedule = 2 Wattage Mult. = 1.20 : Fixture Type = 3 Free-hanging \_\_\_\_\_ SPACE NAME = B112, B110 968.0 sqft Floor Area : Exposure : E S Roof Area : 968
Wall Area : 312.0 0.0 Current
Glass Area : 40.0 0.0 Elements : El,Gr,In 0.0 sqft \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Other Electric = Total Watts 6,776 Schedule No. ADDITIONAL ELEMENT - Ground Slab Floor Area 968.0 sqft Perimeter 44.0 ft 5.0 ft = Depth \*\*\*\*\*\*\*\*\*\*\*\* ADDITIONAL ELEMENT - Infiltration Cooling : 0.05 CFM/sqft = 51 CFM Heating : 0.08 CFM/sqft = 77 CFM Typical : 0.08 CFM/sqft = 77 CFM

	SIMPLE SPACE DESC	CRIPTION	
Space Name : B108			01-31-91
Prepared By : ENGG APPL	ICATIONS CONSUL		6100190202
arrier Hourly Analysis			Page 1 of 1
***********	*****	*****	
	Roof Glass		
U-Value: 0.290		Duilding Waight	. V
Weight : M	M	Glass Factor	
Color : D	D	Internal Shades	? N
People : sqft/person	= 379.0 Schedule	= 1 Activity	Level = 3
Lights : W/sqft	= 2.75 Schedule	e = 2 Wattage N	fult. = 1.20
: Fixture Type	= 3 Free-hang	ring	
		,,	
SPACE NAME = B108			
BIACE NAME - BIOC	1	Floor Area :	759.0 saft
			0.0 sqft
Exposure :			0.0 Bqrc
Wall Area : 234			_
Glass Area : 42	.0 0.0 I	Elements : El, C	er, in
******		*****	******
ADDITIONAL ELEMENT - Ot	her Electric	, <del> </del>	
W/sqft =	7.00		
Total Watts =			
Schedule No. =	1		
schedule No. =	<b>.</b>		
*****	*****	******	****
ADDITIONAL ELEMENT - Gr	ound		
Slab Floor Area	= 759.0 saft		
Perimeter	= 34.5 ft		
	= 5.0 ft		
Depth	= 5.0 10		
*******			
ADDITIONAL ELEMENT - In			
Cooling : 0.05 CF	M/sqft = 40	) CFM	
Heating : 0.08 CF	M/gaft = 61		
	M/sqft = 61		
1,picai . 0.00 cr			

	SIMPLE SPACE DESC	RIPTION	
Space Name : B108A CORF	RIDOR		01-31-91
Prepared By : ENGG APPLI			6100190202
Carrier Hourly Analysis			Page 1 of 1
************		*****	
Walls	Roof Glass		
U-Value: 0.290		Post 1 diam to salah	. v
		Building Weight	
Weight: M	M	Glass Factor	
Color : D	D	Internal Shades	? N
People : sqft/person Lights : W/sqft	= 0.0 Schedule	= 1 Activity	Level = 3
Lights : W/sqft	= 2.00 Schedule	= 2 Wattage 1	Mult. = 1.20
: Fixture Type	= 3 Free-hang	ina	
SPACE NAME = B108A CO	PRETDOR		
D11102 11122 - D1001. 00		loor Area :	1 036 0 aaft
Torre and a			
			0.0 sqft
Wall Area : 98.			
Glass Area : 6.		lements : El, o	
********	******	*****	******
ADDITIONAL ELEMENT - Oth	er Electric		
W/sqft =	0.00		
Total Watts =	0		
Schedule No. =	1		
Deficate No.	<u>.</u>		
******			
ADDITIONAL ELEMENT - Gro			
Slab Floor Area =			
	0.0 ft		
Depth =	0.0 ft		
*******		******	******
ADDITIONAL ELEMENT - Inf	iltration		
Cooling : 0.05 CFM	/saft = 103	CFM	
Heating : 0.08 CFM		CFM	
Typical : 0.08 CFM		CFM	
Typical : 0.08 Crm	133	CFFI	
***************************************			

Space Name Prepared By		APPLIC	ATIONS	CONST	JL			610	1-31-9 019020
Carrier House	rly Anal	ysis P	rogram	1		<b></b>		_	1 of :
*****	******* Walls		***** Roof	Gla	188		******		
U-Value :	0.290		.100	0.5	580		ıg Weight		
Weight :	M		M			Glass F	actor	: 0.	
Color :	D		D			Interna	1 Shades	?	N
People : so Lights : W	qft/pers	on =	· 0.	0 Sch	nedule nedule	e = 1 e = 2	Activit Wattage	y Level Mult.	= = 1.2
: F:	ixture I	:ype =	:	3 Free					
SPACE NAME	= B106	 5							
						Floor Are		242.	
Exposure	:	E				Roof Area	:	0.	0 sqft
		122.0	)	(	0.0	Current			
Wall Area	:	122.0	•	•					
Glass Area	:	21.0	)	(	0.0 I	Elements	: El		
Wall Area Glass Area *************	: *****	21.0	) :*****	) *****	0.0 I	Elements			****
Glass Area *******	: *****	21.0 ***** - Othe	****** er Elec	) *****	0.0 I	Elements			*****
Glass Area ********* ADDITIONAL 1 W/sqft	: ****** ELEMENT	21.0 ***** - Othe	****** er Elec 7.00	) *****	0.0 I	Elements			*****
Glass Area  **********  ADDITIONAL 1  W/sqft Total Wat	: ****** ELEMENT 	21.0 ***** - Othe	7.00 1,694	) *****	0.0 I	Elements			*****
Glass Area ********* ADDITIONAL 1 W/sqft	: ****** ELEMENT 	21.0 ***** - Othe	****** er Elec 7.00	) *****	0.0 I	Elements			*****
Glass Area  ************  ADDITIONAL 1	: ****** ELEMENT  ts No.  *******	21.0 ***** - Othe	7.00 1,694 1	(****** tric	0.0 I	Elements	******	*****	
Glass Area  **********  ADDITIONAL !  W/sqft  Total Watt  Schedule !	: ****** ELEMENT  ts No.  ******* ELEMENT	21.0  *****  - Othe  =  =  -  -  -  -  -  -  -  -  -  -  -	7.00 1,694 1	(******	0.0 I	Elements	******	*****	
Glass Area ************ ADDITIONAL 1  W/sqft Total Watt Schedule 1  *************** ADDITIONAL 1	: ****** ELEMENT  ts No.  ****** ELEMENT  T Area	21.0  *****  - Othe  =  =  -  -  -  -  -  -  -  -  -  -  -	7.00 1,694 1	(****** tric	0.0 I	Elements	******	*****	
Glass Area ************ ADDITIONAL 1  W/sqft Total Watt Schedule 1  ************ ADDITIONAL 1	: ****** ELEMENT  ts No.  ****** ELEMENT  T Area	21.0 ****** - Othe = = = - - Grou	7.00 1,694 1	******* ******* 242.0	0.0 I	Elements	******	*****	
Glass Area  **********  ADDITIONAL    W/sqft  Total Wate Schedule    *********  ADDITIONAL    Slab Floor Perimeter	: ****** ELEMENT  ts No. ****** ELEMENT  T Area	21.0  *****  - Othe  =  -  *****  - Grou	7.00 1,694 1	242.0 11.0	******  *****  sqft ft ft	Elements	******	*****	****
Glass Area  ************ ADDITIONAL !  W/sqft Total Watt Schedule !  ***********  ADDITIONAL !  Slab Floo: Perimeter Depth  ***********************************	: ****** ELEMENT ts No. ******* ELEMENT r Area	21.0  *****  - Othe  =  =  -  ******  - Grou	7.00 1,694 1	242.0 0.0	******  *****  sqft ft ft	Elements	******	*****	****
Glass Area  ***********  ADDITIONAL    W/sqft  Total Wate Schedule    **********  ADDITIONAL    Slab Floor Perimeter Depth  **********  ADDITIONAL	: ******* ELEMENT  ts No. ******* ELEMENT r Area  *******	21.0  *****  - Othe  =  =  -  ******  - Grou	7.00 1,694 1 1.4****	242.0 11.0 0.0	0.0 I	Elements ********	******	*****	****
Glass Area  ************ ADDITIONAL !  W/sqft Total Watt Schedule !  ***********  ADDITIONAL !  Slab Floo: Perimeter Depth  ***********************************	: ****** ELEMENT  ts No. ****** ELEMENT r Area  ******* ELEMENT : 0.0	21.0  *****  - Othe  =  =  -  ******  - Grou	7.00 1,694 1 1	242.0 11.0 0.0	0.0 II *****  *****  *****  ****  13	Elements	******	*****	****

Space Name: B104, B104A Prepared By: ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program	01-31-91 6100190202 Page 1 of 1
Weight: M M Glass F	ng Weight : M Cactor : 0.58
People : sqft/person = 0.0 Schedule = 1 Lights : W/sqft = 2.75 Schedule = 2 : Fixture Type = 3 Free-hanging	Activity Level = 3 Wattage Mult. = 1.20
SPACE NAME = B104, B104A  Floor Are Exposure : E S Roof Area Wall Area : 360.0 0.0 Current Glass Area : 63.0 0.0 Elements ************************************	: 0.0 sqft
W/sqft = 5.00 Total Watts = 3,575 Schedule No. = 1	
**************************************	******
Slab Floor Area       =       715.0 sqft         Perimeter       =       32.0 ft         Depth       =       0.0 ft	
**************************************	*******
Cooling : 0.05 CFM/sqft = 38 CFM Heating : 0.08 CFM/sqft = 57 CFM Typical : 0.08 CFM/sqft = 57 CFM	

Space Name									
•	: DELIVERY	Z							01-31-91
Prepared By				ONSUL				61	100190202
Carrier Hou	rly Analys	sis Prog	ram					Pag	ge 1 of 1
*****	******	*****	****	*****	*****	***	*****	*****	******
	Walls	Roo	f	Glass					
U-Value :	0.290	0.10	0	0.580	Buil	dina	Weight	:	м
Weight :	M	М			Glas	s Fa	ctor	: (	5.58
Color :	D	D.					Shades		
	•				1		J.ILGCD	•	••
People : s	aft/nergor		0 0	Schedu		1	Activit:	v Level	. = 3
Lights : W	drc/bergo:		2 00	Schodu	ile -	2	Mattaca	y Deve:	- 1 20
Lights . W	ixture Typ		2.00	uusiise aa-ba	naina	2	maccage	Mult.	- 1.20
· F	rxcare lyb			L 1 66-119	ingriig				
SPACE NAME	= DELIVE	PY							
OILLOD MILL	- 555172	J1\4			Floor	Area	•	264	.0 sqft
Exposure	•	TP.		S	Roof A				0.0 sqft
Wall Area		66.0			Curren		•	·	o.o aqre
Glass Area		0.0					. 101	C= D+	T
********** GIGBB VIEG	-				Elemen		* <b>5</b> 1	,GE,PL,	. <b>T</b> II
					****	***	****	****	
ADDITIONAL :				10					
W/sqft	 2								
			ሰሰ						
• •			00						
Total Wat	ts =		0						
• •	ts =								
Total Wat:	ts = No. =		0 1						
Total Wate	ts = No. = ******		0 1	*****	*****	 ***	*****		******
Total Water Schedule 1	ts = No. =  ******************************	******* Ground	0 1 *****						
Total Water Schedule 1	ts = No. =	******* Ground	0 1 *****						
Total Water Schedule	ts = No. =	******* Ground	0 1 ******	4.0 sqf					
Total Water Schedule	ts = No. =	******* Ground = =	264	4.0 sqf 2.0 ft					
Total Water Schedule	ts = No. =	******* Ground	264	4.0 sqf					
Total Water Schedule	ts = No. =	******* Ground = = =	264	4.0 sqf 2.0 ft 0.0 ft	t				
Total Water Schedule   ***********************************	ts = No. = ********** ELEMENT - r Area	######################################	264	4.0 sqf 2.0 ft 0.0 ft	t				
Total Water Schedule   ************* ADDITIONAL   Slab Floor Perimeter Depth ************ ADDITIONAL	ts = No. = ********* ELEMENT - r Area ********	######################################	264	4.0 sqf 2.0 ft 0.0 ft	t				
Total Water Schedule   ************ ADDITIONAL   Slab Floor Perimeter Depth ************ ADDITIONAL	ts = No. = ********* ELEMENT - r Area ********	Ground  = = =	0 1 	4.0 sqf 2.0 ft 0.0 ft	*****	***	****	****	*****
Total Water Schedule   ************ ADDITIONAL   Slab Floor Perimeter Depth ********** ADDITIONAL   Area =	ts = No. = ********* ELEMENT - r Area ******** ELEMENT -	Ground  = = =	0 1 	4.0 sqf 2.0 ft 0.0 ft ******	*******	 ****	******** Temp: Co	*******	******
Total Water Schedule   ************ ADDITIONAL   Slab Floor Perimeter Depth ************ ADDITIONAL	ts = No. = ********* ELEMENT - r Area ******** ELEMENT -	Ground  = = =	0 1 	4.0 sqf 2.0 ft 0.0 ft ******	*******	 ****	******** Temp: Co	*******	*****
Total Water Schedule   ************ ADDITIONAL   Slab Floor Perimeter Depth ********* ADDITIONAL   Area = U-Value =	ts = No. = ********* ELEMENT -  r Area  ******** ELEMENT -  90. 0.89	Ground  = = = Partiti O sqft	0 1 ****** 264 12 ****** on 	4.0 sqf 2.0 ft 0.0 ft ******* Unc	****** ond. Sp	 **** ace '	****** Temp: Coo	****** oling =	: 100.0 % : 100.0 %
Total Water Schedule   ************* ADDITIONAL   Slab Floor Perimeter Depth *********** ADDITIONAL   Area = U-Value = ************************************	ts = No. = ********** ELEMENT - TAREA ********* ELEMENT - 90. 0.89	Ground  = = = This is a second of the content of th	0 1 ****** 264 12 0 ******* on 	4.0 sqf 2.0 ft 0.0 ft ********	****** ond. Sp	 **** ace '	****** Temp: Coo	****** oling =	: 100.0 % : 100.0 %
Total Water Schedule   ************ ADDITIONAL   Slab Floor Perimeter Depth ********* ADDITIONAL   Area = U-Value =	ts = No. = ********** ELEMENT - TAREA ********* ELEMENT - 90. 0.89	Ground  = = = This is a second of the content of th	0 1 ****** 264 12 0 ******* on 	4.0 sqf 2.0 ft 0.0 ft ********	****** ond. Sp	 **** ace '	****** Temp: Coo	****** oling =	: 100.0 % : 100.0 %
Total Water Schedule   ************ ADDITIONAL   Slab Floor Perimeter Depth ********** ADDITIONAL   Area = U-Value = ********** ADDITIONAL	ts = No. = ********* ELEMENT T Area  ******** ELEMENT - 90. 0.89	c*******  Ground  = = =  *******  Partiti  O sqft  O BTU/h  *******  Infiltr	0 1 	4.0 sqf 2.0 ft 0.0 ft ******** Unc	******* ond. Sp	 **** ace '	****** Temp: Coo	****** oling =	: 100.0 % : 100.0 %
Total Water Schedule    *********** ADDITIONAL    Slab Floor Perimeter Depth  ********** ADDITIONAL    Area = U-Value =    ********** ADDITIONAL    Cooling	ts = No. = ********* ELEMENT - ******** ELEMENT - 90. 0.89 ********** ELEMENT -	cond cond cond cond cond cond cond cond	0 1 	4.0 sqf 2.0 ft 0.0 ft ******* Unc	******* ond. Sp ond. Sp ******	 **** ace '	****** Temp: Coo	****** oling =	: 100.0 % : 100.0 %
Total Water Schedule    *********** ADDITIONAL    Slab Floor Perimeter Depth  ********** ADDITIONAL    Area = U-Value =    ********** ADDITIONAL    Cooling	ts = No. = No. = ********** ELEMENT	crm/sqf CFM/sqf	0 1 	4.0 sqf 2.0 ft 0.0 ft ******* Unc	******* ond. Sp	 **** ace '	****** Temp: Coo	****** oling =	: 100.0 % : 100.0 %

Space Name: Prepared By Carrier Hour	: ENGG AP	is Program	m	******	01-31-91 6100190202 Page 1 of 1
U-Value : Weight : Color :	Walls 0.290 M D	Roof 0.100 M D	Glass 0.580	Building Weight Glass Factor Internal Shades	: 0.58
Lights : W/		= 2.	.0 Schedu 75 Schedu 3 Free-hai	e = 1 Activit e = 2 Wattage	y Level = 3 Mult. = 1.20
SPACE NAME	= B102			_	
Exposure Wall Area	: : 3	E 64.0	0.0	Floor Area : Roof Area : Current	704.0 sqft 0.0 sqft
Glass Area ************** ADDITIONAL E	*****		*****	Elements : El	
W/sqft Total Watt Schedule N		7.00 4,928 1			
**************************************			*****	*****	*****
Perimeter	Area		704.0 sqff 32.0 ft 0.0 ft		
Depth					
ADDITIONAL E	**************************************			*****	*****

		SIMPLE	SPACE D	ESCRIPTION	
Space Name	: B100				01-31-91
Prepared By	: ENGG APPL	ICATIONS .	CONSUL		6100190202
	rly Analysis				Page 1 of 1
			*****	******	*******
	Walls				
					. 10
	0.290		0.580		lght : M
	M				: 0.58
Color :	D	D		Internal Sha	ides ? N
People : so	oft/person	= 1320.0	Sched	ule = 1 Acti	vity Level = 3
Lights : W	/saft	= 2.75	Sched	ule = 2 Watt	age Mult. = 1.20
• F:	ixture Type	= 3	Free-h	anging	
• £.	treate lype		1166 11		
SPACE NAME	= B100				
					1,320.0 sqft
Exposure	:	E	S	Roof Area :	0.0 sqft
	: 430		0.0	Current	
Glass Area		.0		Elements :	El.Gr.Gr.In
	******	******	*****		******
	ELEMENT - Ot!				
ADDITIONAL I	SLEMENT - OC	ner Elect.	ric		
W/sqft		7.00			
Total Watt	ts =	9,240			
Schedule 1	No. =	1			
*****	*****	*****	*****	*****	******
ADDITIONAL 1	ELEMENT - Gro	ound			
Slah Floor	r Area :	= 13	20 0 80	f+	
	r wrea		20.0 Bq 44.0 ft		
Depth	•		3.0 ft		
*****	*****	*****	*****	*****	*******
ADDITIONAL I	ELEMENT - Gro	ound			
Slab Floor	r Area :	=	0.0 sq	f+	
Perimeter		- =	30.0 ft		
Depth	•	=	4.0 ft		
*****	*****	*****	*****	******	******
ADDITIONAL 1	ELEMENT - In:	filtration	n		
Cooling	: 0.05 CF	W/anf+ =		70 CFM	
_		M/sqft =		106 CFM	
Heating					
Typical	: 0.08 CF	M/sqft =		106 CFM	

#### AIR SYSTEM DESCRIPTION

Name: AHU-1 & AHU-2 BLDG #363 01-31-91 Carrier Hourly Analysis Program 6100190202 Prepared By : E A C, PC BURKE, VA. Page 1 of 2 \*\*\*\*\*\*\*\*\*\*

1. SYSTEM NAME AND TYPE

System Name = AHU-1 & AHU-2 BLDG #363
System Class = Variable Volume
System Type = (VAV/RH) VAV Reheat
Number of Zones = 10

\*\*\*\*\*\*\*\*\*\*\*

SPACE SELECTION (see separate printout) \*\*\*\*\*\*\*\*\*\*\*\*

3. THERMOSTAT & EQUIPMENT SCHEDULING DATA

Operation		Thermostat	Setpoints	Ventilation	
Period		Cooling	Heating	Dampers	
Occupied		75.0 F	68.0 F	OPEN	
Unoccupied		75.0 F	68.0 F	CLOSED	
Weekday Saturday Sunday Design Day	: Occupied : Occupied	Period Begins Period Begins Period Begins Period Begins	at 0;	Duration = 24 hrs Duration = 24 hrs Duration = 24 hrs Duration = 24 hrs	

\*\*\*\*\*\*\*\*\*\*\*

# 4. SUPPLY, VENTILATION, RETURN AIR DATA

SUPPLY AIR

55.0 F Design cooling supply temperature = Minimum terminal air flow rate = 44 %

Type of supply air reset = 1 Reset Not Used

VENTILATION AIR

Nominal ventilation flow rate = 16960.00 CFM
Minimum ventilation flow rate = 8480.00 CFM

5 % of vent air Damper leak rate

RETURN AIR

Zone exhaust air flow rate = 8480.00 CFM Zone exhaust fan power = 0.0 kW = N

\*\*\*\*\*\*\*\*\*\*

#### AIR SYSTEM DESCRIPTION

Name : AHU-1 & AHU-2 BLDG #363 01-31-91 Carrier Hourly Analysis Program 6100190202 Prepared By : E A C, PC BURKE, VA. Page 2 of 2 \*\*\*\*\*\*\*\*\*\* 5. FAN DATA SUPPLY FAN Type 7:Backward inclined or air foil Static = 6.00 in wg Efficiency 54 % == Configuration 1 Draw-thru RETURN FAN 7:Backward inclined or air foil Type = Static = 4.00 in wg Efficiency 54 % \* 6. ACCESSORY DEVICES AND SYSTEMS PREHEAT COIL Setpoint temperature = 40.0 F OUTDOOR AIR ECONOMIZER CONTROL = 3:Integrated dry-bulb = 60.0 FUpper cutoff point Lower cutoff point = -60.0 FVENTILATION AIR RECLAIM (Not used) HUMIDITY CONTROL (Not available) \*\*\*\*\*\*\*\*\*\*\*\* 7. MISCELLANEOUS SYSTEM DATA Cooling coil bypass factor = 0.050Cooling coil bypass factor = 0.050 Type of supplemental heating = 1 Not Used

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### PLANT DESCRIPTIONS

PLANT DES	SCRIPTIONS		
Plant : #2 OIL FIRED BOILS		11-27-90	
Prepared By : ENGG APPLICA		6100190202	
Carrier Hourly Analysis Pa		Page 1 of 1	
********	******	*****	*****
1 PLANT NAME AND TYPES			
Class	= Individual Plants		
Name	= #2 OIL FIRED BOILE	IR .	
Cooling Plant Type	= Air Cooled Recipro	cating	
Heating Plant Type		-	
*******		*****	*****
2 AIR SYSTEM SELECTION			
Air System Name	Mult   Air Syste	m Name	Mult
AHU-1 & AHU-2 BLDG #36	63 1		
************			
3a COOLING PLANT DATA (Air			
Estimated maximum cooling			81.66 Ton
Is an electronic expansi			
		?	N 40 00 mars
Capacity at 95.0 F outdo			42.00 Ton
Input power rate at 95.0	) F outdoor air		1.670 kW/Ton
Type of cooling	3	-	dronic
Is chilled water reset u	ısea	?	N
Is hot gas bypass used		?	N
One compressor per conde	enser circuit	?	Y
Are compressors cycled		?	N
*******	· · · · · · · · · · · · · · · · · · ·	******	*****
3b HEATING PLANT DATA (Con			
Estimated maximum heatir	ng coil load		36.76 MBH
Fuel type			el Oil
Rated plant output			400.0 MBH
Type of heating		= Hyc	dronic
Is plant efficiency comp		?	N
Seasonal plant efficiend	;y	=	65 <b>%</b>
*********	*******	******	******
4 PUMP SYSTEM DATA			
Chilled water pumping sy	ystem head	=	40.00 ft wg
Chilled water pumping sy		=	14.40 F
Hot water pumping system		=	65.00 ft wg
Hot water pumping system		=	20.00 F
			· · · =

### BUILDING DESCRIPTION

BUILDING I	DESCRI	PTIC	N						
Building : BUILDING 363									01-31-91
orepared By: E A C, PC	BURK	Œ, I	/A.						6100190202
arrier Hourly Analysis Pr	rogram	ì							Page 1 of 1
******	****	***	****	****	***	* *	*****	****	******
1. BUILDING INPUTS									
BUILDING NAME					= 1	BU	ILDING	363	
MISCELLANEOUS ELECTRIC									
Maximum power					=		0.0	kW	
Power schedule					=		1		
DOMESTIC WATER HEATING									
Is a domestic how water	syste	em us	sed		?		Y		
Maximum hourly hot water	-				=		200.0	gal	
Hot water schedule					=		4	_	
Average entering water	emper	atui	:e		=		65.0	F	
Average hot water supply					=		140.0	F	
Heating plant type	_				=	2	: Comb	ıstic	n
Fuel type					=	2	: Fuel	Oil	
Plant capacity					=		2400.0	MBH	
Is plant efficiency comp	outer	gene	erated		?		N		
Annual plant efficiency	•	-			=		65	8	
OTHER INPUTS									
Additional building floo	or are	a			=		2046.0	sqft	:
Additional building floor Electrical generating es	fficie	ncy			=		100.00	8	
******	****	***	****	****	***	**	****	****	*******
2. PLANT SELECTION									
Plant Name	Mul	.t	P	lant	Nam	e			Mult
#2 OIL FIRED BOILER	1								
******	****	***	****	****	***	**	****	****	*****
3. FUEL & ELECTRIC RATE S	ELECTI	ON							
Fuel or Energy	No.	Nar	ne of	Rate	Sch	ed	ule		Currency
Electric		ELI	ECTRIC	RATE	(G	EN	ERIC)		MBTU
Natural Gas	5	NA:	TURAL	GAS (	GEN	ER	IC)		MBTU
Fuel Oil	4	DO	MESTIC	FUEL	OI	L	#2 (GE)	NERIC	C) MBTU
_		<b></b>	oty				•		MBTU
Propane Remote Source Heating	10	Em	ty						MBTU
Remote Source Cooling	10	Emi	ty						MBTU
		•	-						

FUEL RATE DATA

Fuel Rate: DOMESTIC FUEL OIL #2 (GENERIC) 01-31-91
Prepared By: E A C, PC BURKE, VA. 6100190202
Parrier Hourly Analysis Program Page 1 of 1

1. FUEL RATE DATA

NAME

Name of rate schedule = DOMESTIC FUEL OIL #2 (GENERIC)

CURRENCY

Currency name = MBTU
Currency symbol = MBTU

BASIC INFORMATION

Units of measurement = Gallon

Conversion factor = 138.70000 kBTU/Gallon Type of rate schedule = 1 Simple Flat rate charge = 0.13870 MBTU/Gallon

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### MONTHLY ENERGY COSTS

Building : BUILDING 363

01-31-91 6100190202

Site: FT. BELVOIR, VIRGINIA repared By: E A C, PC

BURKE, VA.

Page 1 of 1

Carrier Hourly Analysis Program

TABLE 1. HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	Remote Cooling
Jan	206	0	369	0	0	0
Feb	185	0	301	0	0	0
Mar	222	0	249	0	0	0
Apr	298	0	155	0	0	0
May	434	0	91	0	0	0
June	528	0	42	0	0	0
July	609	0	30	0	0	0
Aug	596	0	35	0	0	0
Sept	479	0	75	0	0	0
Oct	335	0	152	0	0	0
Nov	222	0	245	0	0	0
Dec	206	0	350	0	0	0
Tot.	4,319	0	2,094	0	0	0

\*\*\*\*\*\*\*\*\*\*\*\*

TABLE 2. NON-HVAC COSTS (MBTU)

onth	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	
Jan	191	0	15	0	0	
Feb	173	0	13	0	0	
Mar	199	0	15	0	0	
Apr	190	0	15	0	0	
May	198	0	15	0	0	
June	191	0	15	0	0	
July	191	0	15	0	0	
Aug	205	0	16	0	0	
Sept	177	0	13	0	0	
Oct	205	0	16	0	0	
Nov	190	0	15	0	0	
Dec	185	0	14	0	0	
Tot.	2,297	0	177	0	0	

\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Building : BUILDING 363 Site : FT. BELVOIR, VIRGINIA

01-31-91 6100190202

repared By : E A C, PC BURKE, VA.

Carrier Hourly Analysis Program

Page 1 of 1

TABLE 1. MONTHLY COMPONENT CHARGES (MBTU)

Month	Energy Charges	Fixed Charges	Taxes	Total Charges
Jan	383	0	0	383
Feb	315	0	0	315
Mar	265	0	0	265
Apr	169	0	0	169
May	106	0	0	106
June	56	0	0	56
July	45	0	0	45
Aug	51	0	0	51
Sept	89	0	0	89
Oct	168	0	0	168
Nov	260	0.	0	260
Dec	364	0	0	364
Tot.	2,271	0	0	2,271

TABLE 2. MONTHLY TOTALS

Effective Energy Charges Rate Month (Gallon) (MBTU/Gallon) (MBTU) 383 0.13870 Jan 2,764 Feb · 315 2,269 0.13870 1,907 Mar 265 0.13870 Apr 169 1,220 0.13870 106 766 0.13870 May 0.13870 406 June 56 0.13870 45 323 July 370 51 0.13870 Aug 89 Sept 640 0.13870 Oct 168 1,211 0.13870 Nov 260 1,875 0.13870 364 Dec 2,625 0.13870 16,375 Tot. 2,271 0.13870

MONTHLY MBTU EXPENDED FOR SUMMER REHEAT AND DOMESTIC HOT WATER GENERATION AS SIMULATED BY CARRIER E-20 COMPUTER PROGRAM.

APR.	169/2	=	85 MBTU	610 GALS
MAY.	•	=	106	766
JUNE		=	56	406
JULY		=	45	323
AUG.		=	51	370
SEPT.		=	89	640
OCT.	168/z	=	84	606
			516 MBTU	4237 GALS

PROCESS STEAM LOAD FROM DRAWINGS = 1500 165/HR MAX.

CONVERSATION WITH BUILDING PERSONNEL INDICATES
THAT NORMINAL OPERATION OF PROCESS STEAM EQUIPMENT
WOULD BE 2-3 HOURS PEP DAY, 3 DAYS / WEEK.

IF WE ASSUME FULL CAPACITY FOR THIS OPERATING.
TIME WE GET 9,000 IBS / WEEK OF 1800 IBS / DAY
FROM MID-APRIL THE MIC-OCTOBER.

COMPUTER SIMULATED MAX. EST. HTG. LOAD = 836.76 MBH

JAN MBTU = 383 MBH APR METU = 169 MBH

HTG = 169/383 = .4412 x 836.76 = 369.22

SAY = 370 MBH

PROCESS LOAD = 1758

DOM & LAB HW. GENERATION = 194

MAX TOT BOILER LOAD = 2322 MBH

(FROM MID APR THU MID QT.)

SELECT :

91 Bhp

SAY PEERLESS 724 FDA SU 2370 CORR. = 2349 MBH

26.5 GFH

16"\$ VENT (2) 4" 4 (2) 3" SUPS

6R

(5) 3' RETS

126% × 35 × 60

11'x 3'x 5'

HB SMITH MODEL 28-A-13 92 BHP 3096 GROSS OUT

27 GPH 16" VENT 2403.7 NET OUT

106 4 x 30" x 66" (3) 5" 5UPS

(1) 5" RET

# ESTIMATE OF PROCESS STELM USED BY MONTH MID APRIL - MID OCTOBER PROCESS.

**OUTPUT** 

APR 11 × 1800 = 19 800 165 = 36.256 MBTU = 262 GAL

MAY 22 = 39,600 = 72.512523

JUNE ZI = 69.216499 = 37,800

JULY 21 499 = 37,800 = 69.216

AUG 23 = 547 = 75.808 = 41,400

'EPT A = 34,200 452 = 62.623

= 19,800 = 36,256 262 - 11

421,887 MBTU 3044 GALS

## PROCESS STEAM + HEATING \$ HOT WLTER ELERGY

APR	MBT ()	GALS 872	
MAY	178.52	1289	
JUNE	125,22	905	
JULY	114.22	822	
Aug,	126.81	917	
SEPT	151.63	1092	
at.	120.26	868	
		6765 GALS	

SELECT : 2000 GAL OIL STORAGE TANK 5'-4" \$ x 12' L

CONSTRUCTION COST	ESTI	MATE	=	DATE PREPARED FEB	199	SHEET	GF
PROJECT ENERGY SAVINGS	OFFC	etul	UITY '	<u>,</u>		OR ESTIMATE	
FT. BELVOIR, VIR						] CODE A (No desig DDE D (Preliminary ] CODE C (Final de.	dasign)
ARCHITECT ENGINEER ENGINEERING APPL					_	THER <i>(Specify)</i>	n yn y
DRAWING NO.	_	ESTIM	ATOR 6	)	<u> </u>	CHECKED BY	
OL FIRED MP STEAM BOILE			,			VF	
SUMMARY	NO. UNITS	UNIT MEAS.	PER UNIT	TOTAL	PER .	MATERIAL TOTAL	TOTAL- COST
BOILER HOUSE ADDITION	225	SF	23.	5175	14.	3150	8325
SITE PREP.	25	54	3.03	76	4.27	106	182
EXCAVATION ER	33	CY	26	865			865
OIL FIRED HP STEAM BOILER	1	EA		3450		14,990	15,440
2000 GAL OIL STORAGE EQ.		LS		3216		10,225	13,441
MISC HOOK-UP COSTS		15		514		725	1, 239
VENT CHIMNEY 16"\$	40	LF	8.75	350.	84.60	3384	3734
FITTINGS, FLAGHING, TOP, Etc.		15		178.		2598	2776
AUTO DEAFT REGULATOR	1	EA		15,		123	138
STEAM PIPING, FITTINGS, VALVES, ETC.		LS		3120		3189	6309
CONDENSAIL PIPING, TEARS, Etc.		15		767		1042	1809
RETURN FEED WATER SYSTEM		LS		1252		1510	2762
ELECTRICAL LIGHTING & POWER	225	5F	3.70	833	<b>5</b> .50	1238	2071
·							
SUB-TOTAL				19,811		42,280	62,091
LABOR MARKUP 21%				4160			4,160
TAXES 45%						1903	1,903
SUB-TOTAL							68,154
OVERHEAD 10%							6,815
SUB-TOTAL							74,969
PROFIT 10%							7,497
SUB-TOTAL							82,466
TOTAL							# 82,466

## OIL STORAGE

-			L	.M.	•	-1 all d.		
32	TANK			4200		54" P X	12 L	
	HOLD DN		47 .	270	317			
	PIPING			2.68 .63			-	•
	SED PIPING	•		12.70 .91				
2'	FOOT VALVE	_		69	87			. <u> </u>
-	PUMP	•	59	400	459		•	
	TANK GAGE SY		. 79		794.			
	VALVES	-		7.15	16.			
	SHUT OFFS			11,75	31.55			
	FAD CY	(7)	25.	94.	119	•		
	excavation cy	. (60)	<del>45</del> ,27,	····		_		
				700				
			3216	7895	11,111			
			<u></u>					
	<u></u>						*	
					. =	<del>.</del>		, <u></u>
	LEAK DETEC	TION	SUCTER A					
			R W/ALARM	705			<b>≥</b>	
<u> </u>	PROBES:							
			WALL					
	CABLE							
			-					<u> </u>
	OPTIONAL LE							
	PONTIONAL LE		1EC 1 1011 -	2770				

, and the second

ALL FUEL CHIMNEY,	LL LISTED , DOUBLE WALL	, 304 INNER - STLOUTER
-------------------	-------------------------	------------------------

	L	$\sim$	T	
(40') STR 16"\$	8.75	8440	43.35_	
(2) 45° EU	17.55	280		
90° TEE	. 22	315	337	
PLT. SUPPORT (3)	22	161	183	
ROOF THIMBLE	27	360	<i>3</i> 62	
ROOF SUP. ASSEM.	23	515	<b>538</b>	
STACK CAP	9.75	365	374.75	
	178	2598	2176	•
				**************************************

## OIL HOOK-UP

.

FILTER VALVE	11.00 11.00 8.25 33.00	28.00 1149 4.25	37.00 12.50 21.		
VALVE (2)					
2" VENT CAP	6.20	7.50	13.70		
2" TUBE (10)	5.85	2.68 ,63	9.16		
2" st v.P. (35')	6.25	4.08,67	11.00	·	
<b>LOUVERS</b> (2)	8.65	29	37,65	2 322 000 /4000 =	580 × 15 5
DAMPERS (2)		34.	64.	<b>6                                    </b>	
FILL CAP		7,50	13.70		
	514	725	1239		

# STEAM VALVES, PIPING, FITTINGS, VALVES Etc.

			M	<b>T</b>		
132	5" 5TM. VALVES 054 Y (2)	. 65	<b>.5</b> 55	570		
	BOILER BRAIN	5,80	11.90	17.70		
87	5" PIPING (201)	11.10	11.33 1.19	23.42		•
	4" PIPING (75')	9.60	6.77 1.03	17.40		
	PIPING ( )					
110	5" WN/FLANGE (7)	. 44	Z4 4.78	72.78		
	5" 90°ELL (1)	26	91 .7,65	124,65		
	5" TEE (Z)	50	185 12.75	247.75	- ·	_
	4 90°ELL (4)	.71	14.90 7.65	93.55		
	4" WELD JOINTS (10)	36	3.82	<b>अ.</b> ८८		
	5" " (10)	40 2:8:15	4.24	44,24		•
	5" INS 2" (30)	2.65	5.07	7.72		
	4" INS 7" (90)	2.87	5,71	8.58		
		3120	3189	6309		
	CONDENSATE PIPIN	IG , TRAPS _				
		<b>L</b>	<b>M</b>	T		<u></u>
	Z' PIPING (40)	6.25	3,30 .67	10.22		
203	TRAP ASSEMBLY (2)	90	370	410		
	105 (50)	1,82	257	4.39		
	WELD LABOR (8)	22	2.39	24.37		
	MISC 10%	<u>~~</u>	95	165		
		767	1042	1809		
	RETURU FEEDWAT	er				
_		<b>L</b>		T		
	3" PIPING (80')	8.25	4.69 .89	13.83		
	3" VALUE (Z)	79,		229		
	MISC FITINGS 20%	45	150			
	WELD LABOR (16)	30	3.18	33.18		
	CONTROL CHANGES	300	270	<i>ছা০</i>		
	3" INS (100)	2.03	2.92	4.95		
	· .	1252	1510	2762		
		363		<u>ت ب ب</u>		

BUILDING 365

### DESIGN PARAMETERS, SHGs

Location : FT. BELVOIR, VIRGINIA

Prepared By : ENGG APPLICATIONS CONSUL

11-23-90 6100190202

#### DESIGN WEATHER PARAMETERS

TABLE 1. MAXIMUM SOLAR HEAT GAINS - AVERAGE DAYS
(BTU/hr/sqft)

Month	NE	E	SE	s	SW	W	NW	N	Hor
Jan	24.2	61.1	97.3	110.1	97.3	61.1	24.2	24.2	80.0
Feb	31.8	74.8	105.7	113.8	105.7	74.8	31.8	31.8	107.2
Mar	40.8	87.0	106.9	108.0	106.9	87.0	40.8	40.8	136.8
Apr	60.0	97.4	104.4	97.2	104.4	97.4	60.0	49.3	164.3
May	74.9	103.0	98.4	84.0	98.4	103.0	74.9	54.9	181.8
Jun	85.1	109.3	97.5	79.2	97.5	109.3	85.1	57.9	195.2
Jul	80.6	106.7	98.1	81.4	98.1	106.7	80.6	56.4	189.3
Aug	. 69.1	104.1	105.7	94.4	105.7	104.1	69.1	52.2	177.6
Sep	52.3	99.3	114.8	111.6	114.8	99.3	52.3	45.4	158.1
Oct	36.4	88.3	117.7	122.9	117.7	88.3	36.4	36.4	128.2
Nov	26.7	66.5	101.8	113.3	101.8	66.5	26.7	26.7	89.4
Dec	21.4	53.0	87.6	100.9	87.6	53.0	21.4	21.4	68.4

TABLE 2. MAXIMUM SOLAR HEAT GAINS - DESIGN DAYS
(BTU/hr/sqft)

				,, -													
Month	NE	E	SE	s	SW	W	NW	N	Hor								
Jan	20.4	158.9	243.9	253.8	243.9	158.9	20.4	20.4	142.0								
Feb	53.0	189.1	246.5	237.5	246.5	189.1	53.0	24.7	187.7								
Mar	95.9	219.8	234.5	200.7	234.5	219.8	95.9	29.4	229.0								
Apr	141.6	224.4	200.1	146.7	200.1	224.4	141.6	34.1	256.0								
May	166.1	220.1	170.7	104.6	170.7	220.1	166.1	37.4	268.0								
Jun	173.2	215.4	156.7	87.8	156.7	215.4	173.2	47.4	269.7								
Jul	163.7	215.7	166.5	101.4	166.5	215.7	163.7	38.3	264.7								
Aug	136.4	216.6	193.1	141.7	193.1	216.6	136.4	35.8	251.3								
Sep	90.3	207.2	224.7	194.9	224.7	207.2	90.3	30.6	221.4								
Oct	52.0	182.7	238.2	230.6	238.2	182.7	52.0	25.5	184.4								
Nov	20.7	156.1	239.8	249.9	239.8	156.1	20.7	20.7	141.3								
Dec	18.5	141.9	236.4	254.2	236.4	141.9	18.5	18.5	122.2								

## MASTER SCHEDULE SUMMARY

Page 1 11-23-90 Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program 6100190202

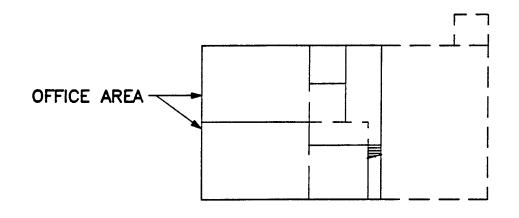
******	****	****	****	****	****	****	****	****	****	****	****	***
MASTER SCHEDU	LE 1	. occi	JPANC'	Y 			Hou	rly Po	ercen	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	0	0	0	0	0	10	50	100	100	100	100
Saturday	0	0	0	0	0	0	5	5	5	10	10	10
Sunday	0	0	0	0	0	0	0	5	5	5	5	5
DESIGN	O	0	0	0	0	10	20	100 	100	100 	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	80	50	10	10	5	5	0	0
Saturday	10	10	10	5	5	5	5	5	0	0	0	0
Sunday	5	5	5	5	5	5	0	0	0	0	0	0
DESIGN	100	100	100	100	100	100	100	20	10	O	0	0
**************************************		***** . LIG		****	****	****				***** tages	****	****
			2	3	4	   5	6	   7	   8	9	10	11
Hour>	0	1	<u> </u>					·	   °		, <u>10</u>	
Weekday	5	5	5	5	5	5	20	80	100	100	100	100
Saturday	5	5	5	5	5	5	15	15	20	40	50	50
Sunday	5	5	5	5	5	5	5	15	20	30	30	30
DESIGN	10	10	10	10	10	20	50	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	90	70	40	30	20	20	5	5
Saturday	50	50	50	50	50	40	30	20	5	5	5	5
Sunday	30	30	30	20	20	20	20	5	5	5	5	5
DESIGN	100	100	100	100	100 	100	100	50	20	10	10	10
*****					****	****					****	***
MASTER SCHEDU	LE 3	. EQU	IPMEN	T 			Hou	riy P	ercen 	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	5	5	5	5	5	5	20	50	100	100	1	i
Saturday	5	5	5	5	5	5	10	10	15	20	20	20
Sunday	5	5	5	5	5	5	5	10	10	10	10	20
DESIGN	10	10	10 	10	10	20	40	100	100	100	100	100
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	100	100	100	100	80	50	20	10	5	5	5	5
Saturday	20	20	20	10	10	10	10	10	5	5	5	5
Sunday	20	15	15	10	10	10	10	5	5	5	5	5
DESIGN	100	100	100	100	100	100	100	40	20	10	10	10
********		<b>-</b>			<b>-</b>				<del>-</del>			

MASTER SCHEDULE SUMMARY

Page 2 11-23-90

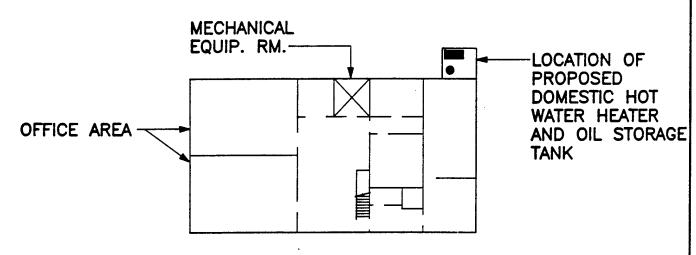
Prepared By : ENGG APPLICATIONS CONSUL Carrier Hourly Analysis Program 6100190202

MASTER SCHEDU	LE 4.	DOM	ESTIC	HOT	WATER		Hou	rly P	ercen	tages		
Hour>	0	1	2	3	4	5	6	7	8	9	10	11
Weekday	0	0	0	0	0	5	10	10	20	20	20	80
Saturday	0	0	0	0	0	2	2	2	5	5	5	5
Sunday	0	0	0	0	0	0	0	2	2	2	2	2
DESIGN	0	0	0	0	0	5	5	20	20	20	20	80
Hour>	12	13	14	15	16	17	18	19	20	21	22	23
Weekday	80	20	20	20	10	10	5	5	5	2	0	0
Saturday	5	5	5	2	2	2	2	2	0	0	0	0
Sunday	2	2	2	2	2	2	0	0	0	0	0	0
DESIGN	80	20	20	20	10	10	5	5	2	2	0	0





## MEZZANINE FLOOR PLAN



FIRST FLOOR PLAN

BUILDING 365 KEY PLAN

FUEL RATE DATA

Fuel Rate : DOMESTIC FUEL OIL #2 Prepared By : ENGG APPLICATIONS CONSUL

11-23-90 6100190202 Page 1 of 1

Carrier Hourly Analysis Program

1. FUEL RATE DATA

NAME

Name of rate schedule

CURRENCY

Currency name

Currency symbol

BASIC INFORMATION

Units of measurement

Conversion factor

Type of rate schedule

Flat rate charge

= DOMESTIC FUEL OIL #2

= Dollars

= \$

= gallon

= 138.70000 kBTU/gallon

1 Simple

= 1.03000 \$/gallon \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

BUILDING I Building: BUILDING 365 (# Prepared By: ENGG APPLICAT Carrier Hourly Analysis Pr ************************************	CIONS CONSUL	Pa	
MISCELLANEOUS ELECTRIC Maximum power Power schedule		= 0.0 kW = 1	
DOMESTIC WATER HEATING Is a domestic how water Maximum hourly hot water Hot water schedule Average entering water t Average hot water supply Heating plant type Fuel type Plant capacity Is plant efficiency comp Annual plant efficiency  OTHER INPUTS Additional building floor Electrical generating ef	emperature temperature uter generated or area ficiency	? Y = 100.0 gal = 4 = 65.0 F = 140.0 F = 2 : Combustion = 2 : Fuel Oil = 230.5 MBH ? N = 65 % = 0.0 sqft = 100.00 %	
	Mult   Plant		Mult
#2 Oil Fired Boiler ************************************		******	*****
Fuel or Energy	No. Name of Rate	Schedule	Currency
	10 ELECTRIC RATE 5 NATURAL GAS ( 4 DOMESTIC FUEL 9 Empty 6 HEAVY FUEL OI	C (GENERIC) GENERIC) L OIL #2 (GENERIC)	MBTU MBTU MBTU MBTU MBTU MBTU

#### MONTHLY ENERGY COSTS

Building: BUILDING 365 (#2 OIL) M

Site : FT. BELVOIR, VIRGINIA

11-08-90 6022890201

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program Page 1 of 1

TABLE 1. HVAC COSTS (MBTU)

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	Remote Cooling
Jan	0	0	0	0	0	0
Feb	0	0	0	0	0	0
Mar	0	0	0	0	0	0
Apr	0	0	0	0	0	0
May	0	0	0	0	0	0
June	0	0	0	0	0	0
July	0	0	0	0	0	0
Aug	0	0	0	0	0	0
Sept	0	0	0	0	0	0
Oct	0	0	0	0	0	0
Nov	0	0	0	0	0	0
Dec	0	0	0	0	0	0
Tot.	0	0	0	0	0	0

1

Month	Electric	Natural Gas	Fuel Oil	Propane	Remote Heating	
Jan	0	0	 7	0	0	
Feb	. 0	0	7	0	0	
Mar	0	0	8	0	0	
Apr	0	0	7	0	0	
May	0	0	8	0	0	
June	0	0	7	0	0	
July	0	0	7	0	0	
Aug	0	0	8	0	0	
Sept	0	0	7	0	0	
Oct	0	0	8	0	0	
Nov	0	0	7	0	0	
Dec	0	0	7	0	o	
Tot.	0	0	88	0	0	

#### FUEL OIL COSTS

Building: BUILDING 365 (#2 OIL) M

Site: FT. BELVOIR, VIRGINIA

11-08-90 6022890201

Prepared By : ENGG APPLICATIONS CONSUL

Carrier Hourly Analysis Program

Page 1 of 1

TABLE 1. MONTHLY COMPONENT CHARGES (MBTU)

Month	Energy Charges	Fixed Charges	Taxes	Total Charges
 Jan	 7	0	0	7
Feb	7	0	0	7
Mar	8	0	0	8
Apr	7	0	0	7
May	8	0	0	8
June	7	0	0	7
July	7	0	0	7
Aug	8	0	0	8
Sept	7	0	0	7
Oct	8	0	0	8
Nov	7	0	0	7
Dec	7	0	0	7
Tot.	88	0	0	88

TABLE 2. MONTHLY TOTALS

Month	Charges (MBTU)	Energy (gallon)	Effective Rate (MBTU/gallon)
Jan	7	53	0.13870
Feb	7	48	0.13870
Mar	8	55	0.13870
Apr	7	53	0.13870
May	8	55	0.13870
June	7	53	0.13870
July	· 7	53	0.13870
Aug	8	58	0.13870
Sept	7	49	0.13870
Oct	8	58	0.13870
Nov	7	53	0.13870
Dec	7	51	0.13870
Tot.	88	638	0.13870

APR
 
$$7/2$$
 =
 3.5 metu
 27 gals

 MAY
 =
 8
 55

 JUNE
 =
 7
 53

 JULY
 =
 7
 53

 AUG
 =
 8
 58

 5EPT
 =
 7
 49

 OCT
  $8/2$ 
 =
 4
 29

 41.5 METU
 324 GALS

800000/31 = 258,06 MBH /24 = 10,75 MBH AVG

SAY ALL ENERGY IS EXPENDED WITHIN A 10HR PERIOD = 25,8 MBH

DOUBLE THIS FOR PIPING LOSSES & SAFETY FACTOR = 51,6 MBH

SLY = 52 MBH

WORST CASE MAX BASED ON SELECTED UNIT INPUT MBH

= 152 MEH

BASED ON OIL FIRED DOMESTIC HOT WATER HEATER

BOCK WATER HEATERS, INC. MODEL 51E

50 GAL STORAGE 152 MBH INPUT 138 GPH @ 100° 1.1 GPH #Z

120v, GOHZ 1" 18 HP 2"FIBERGLASS INS.

364 Ibs MEET ASHRAF 90 A , G"VENT, 59"H × 24'9'

10 YR LIMITED WARRAUTY, GLASS LINED, TURBOFLUE DESCRIP,

MAGNESIUM ALLODES

COST QUOTE: R.E. MICHEL CO. INC., E. VIENNA, 698-6244 \$600

OIL STORAGE TANK

SELECT: 275 GAL STD, INDOOR TANK

CONSTRUCTION COST	T ESTI	MAT.	E	DATE PREPARED	FEB	199 1 SHE	ET GF
PROJECT ENERGY SAVINGS	OPP	5PTU		SUPLEY		OR ESTIMATE	
LOCATION						GODE A (No.	design completed) nary dasian)
FT. BELVOIR, VIE				<del></del>	<b>"</b>	CODE C (Find	ol designj
ENGINEERING APPL	ICATIO		LONSU	LTANTS	Щ	THER (Specify)	
OIL FIRED DOM, H.W. HEA	TING	23	- F	7EF	•	CHECKED BY	VP
	QUANT			LABOR		MATERIAL	
SUMMARY	NO. UNITS	UNIT MEAS.	PER	TOTAL	PER	TOTAL	COST
OIL FIRED HW HEATER	1	EA	·	250		600	850
275 GAL. DOM. OIL STORAGE TANK	1	EA		71		225	296.
OIL LINE & HOOK-UP	1	15		152		103	255.
VENT CHIMNEY	16	LF	5.85	93.60	3.96	63,40	157.
FITTINGS, FLASHING, TOP		15		80.		73.	153.
AUTO VENT DAMPER	1	EA		16.		137.	153.
COMBUSTION AIR VENTS	2	EA	4.55	9,10	8.45	16.90	26.
MANUAL DAMPERS	2	EA	9.30	18.60	8.20	16.40	35.
ELECTRICAL WORK		15		100.		300,	455.
BUILDING ADDITION	72	SF	23.	1656	14.	1008	2664.
SUB-TOTAL				2,446.		2543.	4,987.
LABOR MARKUP 21%				514,			514
TAXES 45%						114.	114
SUB-TOTAL	-						5617
OVERHEAD 10%							562
SUB-TOTAL						***	4179
PROFIT 10%							613
SUB-TOTAL		-	1		·		<u> </u>
T							4
TOTAL							# 6500,
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CONSTRUCTIO	N COST	ESTI	MATE		DATE PREPARED AUG	1991		G F
ROJECT ENERGY SA	VILIGE	OFF.	ETU	UTY 4		BASIS FO	R ESTIMATE	
CATION						. —	CODE A (No design DE D (Proliminary	
FT. BELVOIR						_	CODE C (Final de	isign)
ENGINEERING	APPLI	CATION	JS 6	CONSU!	JANTS		HER (Specify)	
RAWING NO. DOM, HW REPLACE	,		ESTIM		REF	.	CHECKED BY .	>
JOINT THE THE		QUANT	ITY		LABOR	1 1	ATERIAL	
	SUMMARY	NO. Units	UNIT MEAS.	PER UNIT	TOTAL	PER UNIT	TOTAL	COST
OIL FIRED HW HEA	TER	1	EA		250.		600.	850.
ONNECTIONS: PIP		1	15		60.		25.	85
ELECTR		1	LS		40.		10.	50
260-11-								
			<u> </u>					
			1					
			<u> </u>					
		-						
SUB-TOTAL			<del>                                     </del>		350.		635.	935,
JUD- IDIAL			<del> </del>			<del>                                     </del>		
							<u></u>	
			1				· · · · · · · · · · · · · · · · · · ·	
			1					
LABOR MARKUP	21%		+		74			74
			1		· /T_		29	29
TAX ES	4,5%		1			<u> </u>	<u> </u>	1088
SUB-TOTAL	10%		-				<u> </u>	109
OVERHEAD	10/0		-			1		11197
SUB-TOTAL	1001	<u></u>	1		<u> </u>			120
PROFIT	10%		1		<u> </u>			1317
SUB-TOTAL			1				<del></del>	
. A		<u> </u>	<del> </del>	<u>'                                     </u>			SAY	\$ 1320.
TOTAL			1		·		<b>4</b> 771	100.
						<u>'                                    </u>		
	· · · · · · · · · · · · · · · · · · ·		1			1 1		
				<u> </u>		1		!
					<u> </u>			<u> </u>